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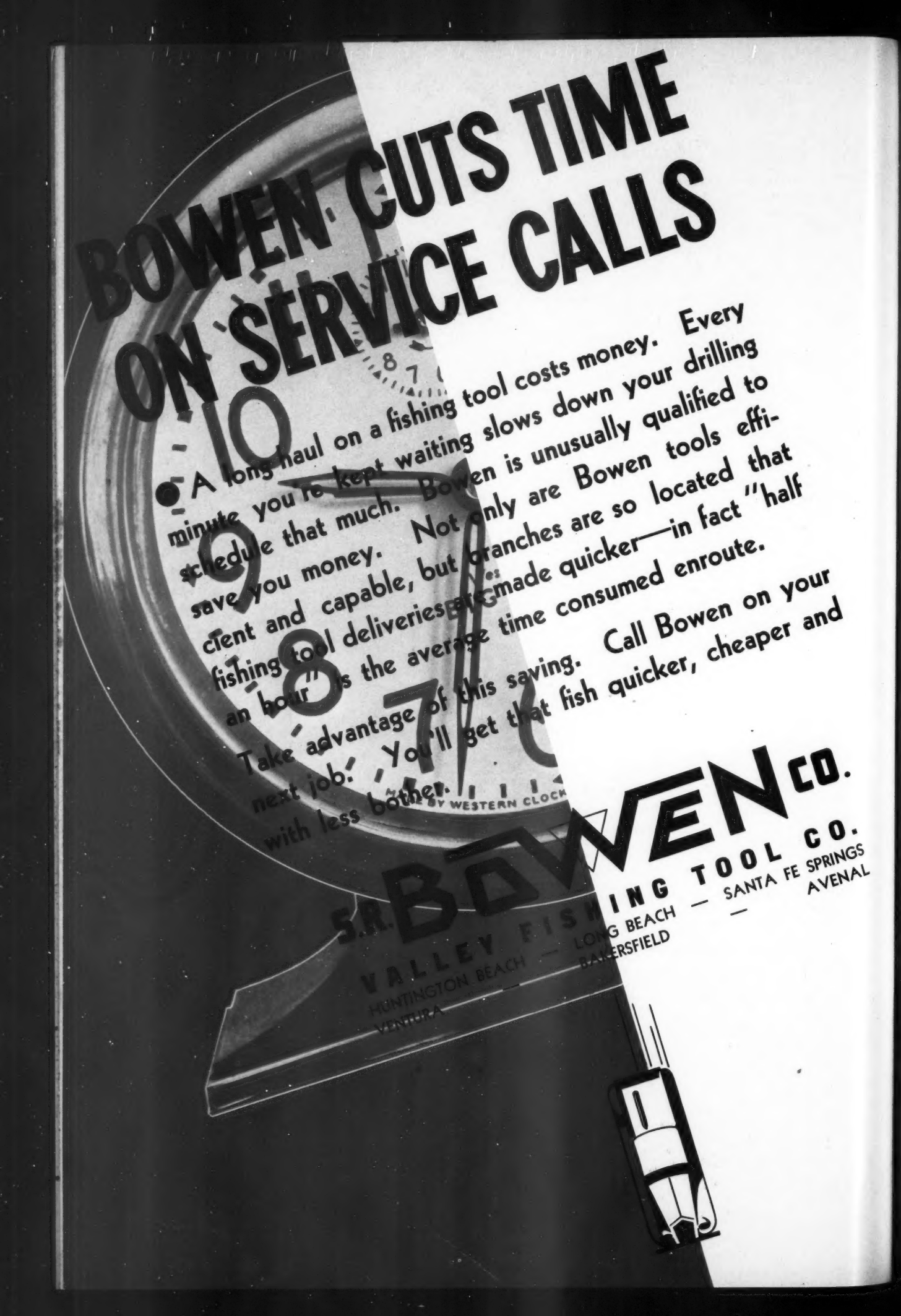
DRILLING AND PRODUCTION TOOLS

FEBRUARY 5, 1937

Vol. 30
No. 3
Whole
No. 1482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CALIFORNIA
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and Petroleum Industry

THE WORLD'S OLDEST OIL TRADE PUBLICATION

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FEBRUARY 5, 1937
VOL. 31 • NO. 3
WHOLE NO. 1482

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COMING EVENTS

February 15-18
A. I. M. E. 147th meeting, Engineering Societies Bldg., New York.

February 23-25
Ohio Petroleum Marketers Assn., Annual Convention and Trade Exposition, Hotel Deshler-Wallick, Columbus, O.

February 23-25
Wisconsin Petroleum Assn., Annual Convention and Equipment Show, Plankington Hotel, Milwaukee.

February 24-25
Iowa Petroleum Assn., Des Moines, Iowa.

March 17-19
American Association of Petroleum Geologists, 22nd Annual Convention, Biltmore Hotel, Los Angeles.

February 24-26
Assn. of Highway Officials of North Atlantic States, 13th Annual Convention, Hotel Pennsylvania, New York.

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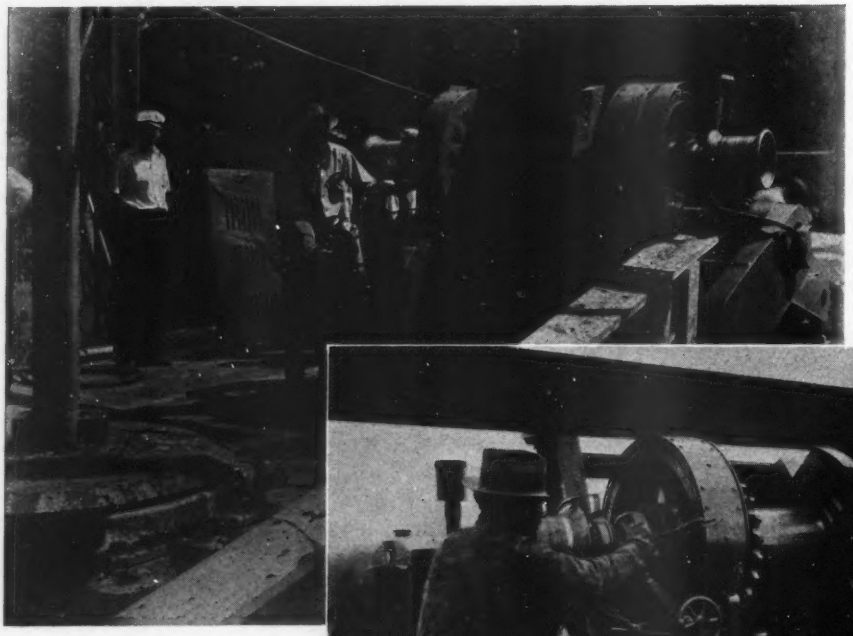
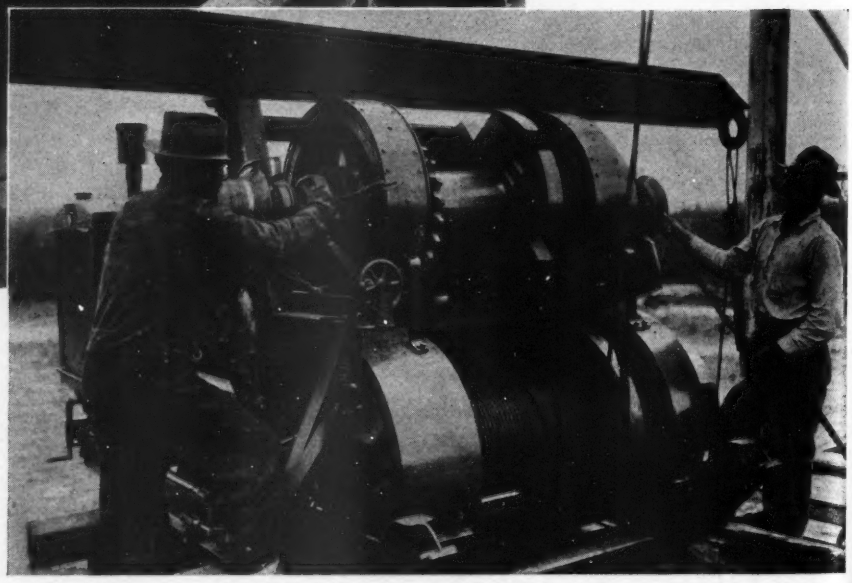


BOTH DRUMS AND CATHEAD SHAFT FRICTION CLUTCH DRIVEN



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Section 36 Again

Whatever may be the strictly legal merits of the action brought by the Department of Justice to recover from the Standard Oil Co. of California and other fee owners, sec. 36, 30-23, Elk Hills, the action appears to be morally indefensible. If the law be such as to compel the courts to uphold the contentions, it may go far toward undermining public confidence in the good faith of the government in regard to public lands. It may well cause capital to hesitate about undertaking any development on land over which there is any possibility of the government's asserting a claim.

The government seeks to cancel a patent issued some 30 years ago and allowed to stand unchallenged while fortunes were being spent upon its development. It also seeks to force the companies and individuals who bought it from the State of California,the original patentee, and developed it in good faith, to repay the value of all oil extracted. One individual owner estimates that if the courts uphold the government's contentions, his share will be about $2,000,000. Standard Oil and its stockholders will, of course, be the chief victims. However, Standard is big enough to take care of itself and carry the burden—although this fact does not lessen the injustice of the suit—but how about such plunder of individual owners? Can they stand it?

We do not, and have no right to, attempt to forecast the decision of the courts upon the legal points, but we do not hesitate to say that the suit never should have been brought.

In saying what we have said above we are not unmindful of the fact that the question of title to sec. 36, once closed by the ruling of a former Secretary of the Interior, was reopened by Congressional action during a time when public feeling was running high so that the present Administration is carrying out a policy it did not originate. However, cancellation of the patent to sec. 36 would be a big step along the line of Secretary Icke's policy of holding in government ownership and strict control all the oil lands to which it can find any claim. This policy started with his predecessor, Wilbur, but Ickes has expanded and pushed it to the limit of his ability.

THE STANDARD OIL COMPANY OF CALIFORNIA

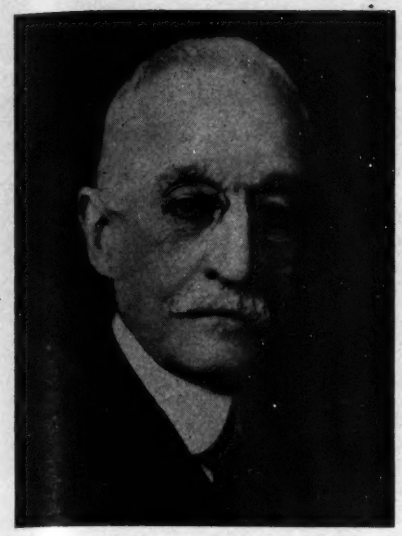
How It Began

By Douglas G. McPhee

The California Oil World is sincerely grateful to the executives of the Standard Oil Company for aiding in the research necessary to present the history of that company, and for permitting the author unlimited access to the necessary records. The cooperation afforded the author has been full and complete. Without it, the story could never have been written.

> "Their works...are extensive, complete and solid, and built upon plans prepared with the aid of the latest improvements for economy, dispatch of business, and security."
>
> —Commerce and Industries of the Pacific Coast (1882)

Mitchum, Tully and Company, California investment bankers, cooperating with the California Oil World, are making possible this series of articles telling of the origin, growth, and development of the companies making up the California oil industry of today. It is the belief of Mitchum, Tully and Company and of the California Oil World that the readers of the publication will find these articles interesting and pleasing as well as of historical value.



D. G. Scofield

From an office desk on an upper floor at 225 Bush Street, San Francisco, Kenneth R. Kingsbury, president of the Standard Oil Company of California, can look out over the bay and see plentiful evidences of the far-reaching might of his organization. On the street, 18 stories down, a sleek new stream-lined tank truck glides smoothly along in traffic; its colors are red, white and blue. If the day is fine, Mr. Kingsbury can see, at the northern end of the bay, the white tanks surrounding the Richmond Refinery. Closer at hand is the new Bay Bridge, over which move two caravans of hurrying cars. Mr. Kingsbury can reflect with satisfaction that one out of every five of these cars has its tank well filled with Standard gasoline.

But if Mr. Kingsbury, in reminiscent mood, wishes to look back to the beginnings of his organization, and to trace the steps by which it first assumed leadership in California's petroleum industry, he must close his eyes to all that he sees from his office window. It is impossible to visualize the origin of the oil business in California against such a background, for those things in the present-day world that mean most to the industry did not exist, even in potential form, in 1875, when a few daring men laid the foundations of the industry and of this company.

Kerosene Lamp Guided Pioneers

The needs of people dictate how industries shall grow. The amazing thing about this industry is that it was born, only a handspan ago in history, to meet a need which has now nearly ceased to exist, the need for kerosene for light. But it grew tremendously vast under the stimulus of a new need, which the creators of the industry could not even dream of. Since early in the 20th century, oil has meant speed. In the last quarter of the 19th century, it meant only light. California's oil pioneers, as they tramped over dusty hills and drove their way up its rocky canyons, were guided by the flickering wick of a kerosene lamp.

In order to understand what these men did, we must note not only that they lived in a different era in time, but that they did their work in a California almost inconceivably different from the California of four-lane highways, service stations and trailer camps.

In 1875, the railroads were still exciting novelties; they had supplanted wagon trains or transcontinental travel only six years before. Only two years had passed since the last Indian scalping party had whooped along the Oregon border. No rails yet connected San Francisco with its little neighbor in southern California; Los Angeles was just rubbing sleepy eyes and preparing to emerge from the cocoon of a Mexican pueblo. It contained fewer people than Amador County.

San Francisco was the city of the state, boasting a quarter of its population and nearly all its financial activity. One of every seven persons in the state was a Chinese; San Franciscans were in a frenzy over the Chinese question.

California In Flux

There was evidence in plenty that California was in transition. Grain was supplanting gold as the state's leading resource. A few orchards were being planted; farms were increasing at the rate of 2000 a year; there were only half as many cattle on the ranges as ten years earlier.

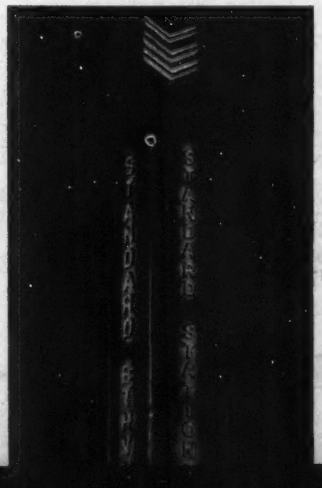
During the preceding year, 1874, San Francisco had been in the grip of a gambling fever, induced by the spectacular silver treasure uncovered in the Comstock Lode. But the Comstock had proved exhaustible; while it had created its great fortunes, it had ruined its hundreds. The Bank of California had recently closed its doors; mining stocks had tumbled to almost invisible values; an average of one San Franciscan a week committed suicide during the two years 1874-75.

Canny business men recognized the turn of events, and saw that a new California was in the making. Those who had profited in the silver excitement looked for new places to put their money to work. One historian says: "Those persons who had capital sought other investments. Manufactures and other industries multiplied. More attention was given to agricultural development."

First Search for Oil

Petroleum had come in for its share of attention during the statewide hunt for mineral treasure. It was well known that there was oil beneath California's soil; hundreds of surface indications told their plain story and these seepages had occasionally been recovered and used for both illuminating and lubricating purposes.

In Pennsylvania, Col. Drake had brought in his historic first well in



Scene taken in 1880 of original Newhall Refinery, built in 1876 by associates who formed the Pacific Coast Oil Company, predecessor of the Standard Oil Company of California.

1859. Crude oil had zoomed to a price of $19 a barrel. We can imagine that a glitter of anticipation shone in the eyes of San Franciscans as they read in the columns of The Alta California the story of the Pennsylvania oil stampede and recalled the traces of petroleum that they had seen in their own state. (Probably they failed to note, two years later, that the price had tumbled to 10 cents a barrel.) At any rate, there was an active search for oil in California in 1864 and the following several years. A chronicle of the period declares:

"A petroleum fever took possession of the state, and at least $500,000 was spent in unprofitable borings, including $250,000 in Ventura County. In 1865 there were 62 petroleum companies incorporated in California, and of these 31 were formed to bore for oil in Humboldt County, nine for Colusa County, seven for Contra Costa County, three for Los Angeles County, and smaller numbers for other counties."

But of course the problem in California was, just as it had been in Pennsylvania, not to discover where oil was hidden, but to produce it in paying quantities. These earliest prospectors, although they found oil, and explored territories which later became important producing fields, failed to meet the economic test. They produced oil in several sections of the state—notably in the Ventura-Newhall area—by tunneling and by primitive drilling methods, but their costs were large and the amount they recovered was small. The Federal Trade Commission records: "The drilling operations undertaken from 1864 to 1866 were abandoned . . . and no further attempt was made to drill until 1875."

Thus California petroleum was waiting to be born. The oil was there. The market was there—not an enormous demand, but the needs of a rapidly growing population, which was paying 60 cents a gallon for kerosene brought 'round the Horn. The capital was there—money to be invested in the future of the Pacific Coast. Two things were needed: men familiar with the methods that had proved successful in Pennsylvania; and, even more important, men of foresight, able to inspire others with a vision of building an industry rather than taking a speculative flier for quick returns.

Standard's Founder

In 1875 a man of this sort stepped forward. His name was D. G. Scofield. He started the enterprise which became, through a long chain of development, the Standard Oil Company of California.

Scofield had come to California in 1870, a broad-shouldered young fellow of twenty-seven, tanned by eight years of work as a prospector in Pennsylvania. He knew the methods by which the profitable fields near Titusville had been developed. He had not been far away when the first flowing wells, in Venango County, had come in to flood the market and send prices down to as low as five cents a barrel at the well. He had learned that oil could bring great losses as well as rich rewards.

When he came West, he turned to the marketing side of the industry which he knew best, and set up a little business as a dealer in kerosene, paint and oils. But the virus of production was in his blood, and it was not long before he began to give absorbed attention to all he could hear and read about past attempts at development in various parts of the state.

The district which interested him most was the Ventura-Newhall area. It had an abundance of surface indications, and, more important, a record of actual production (although not on a commercially successful scale). Scofield decided to see this district for himself. When he had tramped through its valleys and barrancas, he came out with the conviction that there was oil to be found in the upper reaches of Pico Canyon, seven miles from Newhall, in the Santa Susana mountains. Traditionally, a sheep-herder had first entertained a similar idea 15 years before, and had taken out a claim, but had traded it for a barrel of whiskey. The claim had passed from hand to hand in the intervening period, but there had been no development. Pico Canyon was still virgin, rocky, desolate, inaccessible. Nevertheless, Scofield, persuaded more by what he could observe of the district's surface geology than by the oil seepage at the head of the canyon, determined that it deserved a thorough test.

To make such a test required more strength, financial and physical, than young Scofield could exert by himself, and he went out to get help. In San Francisco he found men, including former Mayor Bryant, who were willing to put up a little money. In Los Angeles he found Alex Mentry, a powerful, bearded carpenter, who gave invaluable help in the drilling. He went back to Pico Canyon, and drilling began.

The accounts of the crucial period, 1875-76, are conflicting. The former year is set as the date of bringing in the first oil; yet it is usually credited to the California Star Oil Works Company which was not formed until 1876. Some records indicate that Mentry was in possession of the lease to the property and played the role of a principal until Scofield and associates took over the lease a few months later. In other accounts, Scofield is the moving spirit, and Mentry his foreman.

Probably what actually happened is something like this: As long as the venture was a long shot, those who put in their time and money were content with a very loose association, without a clearly marked division of responsibility and ownership. But when oil was found, and it was apparent that Scofield's dream was going to come true, the company was formally organized; Scofield assumed his position as general manager; the lease went to the company.

At any rate, Scofield and Mentry drilled and found oil. The first well went down on the axis of a steeply dipping anticline at the head of the canyon. They used the primitive spring-pole method: the weight of two men was the force that sent the bit into the ground, and the springy strength of a sapling raised it out again for the next stroke. A month of this arduous labor gave a total depth of 30 feet, and at that depth, No. 1 "came in," with a daily production of two barrels of 32-gravity oil. This was not enough, but it was encouraging; a second well was sunk across the canyon, with a similar result. A third attempt was a dry hole. Then No. 4 went down to the prodigious depth of 600 feet, and it yielded 150 barrels a day!

If Scofield had been simply boring for oil, this result should have spelled crowning success for his efforts. But he saw that it represented only one step along a long, uphill road. He envisioned his enterprise as an industry, and as soon as No. 4 had confirmed his belief that oil could be produced, he set about putting it on an industrial basis. That meant refining; it also meant taking the product to market. The California Star Oil Works Company was formed in 1876 and, with Scofield as general manager, it resolutely tackled these problems, no less difficult than the primary one of production.

Scofield, indeed, had started to set up refining facilities even before No. 4 had been completed. He had sent to Titusville for experienced men, and the first practical commercial refinery in the state had been built near the present town of Newhall. A Standard Oil Company official came across its tumble-down ruins a few years ago, and the company caused it to be rebuilt in its original form. It may be seen today, only a step from the highway, about a mile east of Newhall, a monument to the founders of the industry.

A second refining unit was set up about the same time at San Buenaventura (now known as Ventura) on the coast; these two units, with a combined capacity of 60 barrels a day, served for about two years. In '78, additional stills brought the refining capacity of the California Star Oil Works Company to 100 barrels a day.

But the refining problem had not been solved; and it was immensely complicated by transportation difficulties. Before the coast line of the Southern Pacific was completed, the oil from Pico Canyon had to be carried by team over the hilly barriers that separated the producing field from San Pedro to the south or San Buenaventura to the west, and then loaded on sailing vessels for San Francisco. It was slow and expensive, and the kerosene produced in those early refineries, truth to tell, was not all it might be. After three years even the courageous, far-sighted Scofield was staring failure in the face, for the cost of producing, refining and transporting the oil was more than the returns from its sale.

Scofield's capacity for true industrial imagination asserted itself once more. He saw that this was an ad-

Derrick now in place over one of the original oil wells (Pico No. 4) of the California Star Oil Works Company, first predecessor of the Standard Oil Company of California.

venture that must be conceived in big terms; that the choice was between a large-scale enterprise and none at all.

He had a way with him, this man, to make others share his visions. He went back to his associates in San Francisco and informed them (as the **Standard Oil Bulletin** has told the story) "that either the Pico Canyon enterprise must cease, its derricks rot, and its equipment turn red with rust, or more money must be had. Scofield believed implicitly—and his extreme confidence prevailed."

The California Star Oil Works Company, therefore, in 1879, gave place to a new organization—the Pacific Coast Oil Co., incorporated on September 9 in San Francisco with a capitalization of $1,000,000. The five men who subscribed its capital and became directors were Charles N. Felton, L. D. Fisk, George Loomis, George M. Hedges and James Lawler. These were men prominent in San Francisco's financial and civic life. Lawler was a judge. Felton, who lived in San Mateo, was a representative of his county in the legislature (subsequently he became a United States senator). At least one of them—Felton—had previously had practical oil experience, for we read that he had produced oil in Moody Gulch, Santa Clara County, in 1878. Felton became president and Scofield held the title of auditor in the corporation. The formation of this company is the event from which the present Standard Oil Company of California traces its corporate line.

Undisputed Leadership

In the following five years, Pacific Coast Oil Co. assumed a dominant position in the infant western oil industry. Before 1880 had passed, it had enlarged its production, sinking new wells in Wiley Canyon, a few miles from the Pico property. It had laid a two-inch pipe-line, the state's first oil-line, from the producing area to Elayon, a station on the new railroad (Southern Pacific had completed its coast route in the meantime). It had constructed a new refinery at Alameda Point on San Francisco Bay; to this refinery it shipped its crude by rail from Elayon, using tank cars—flatcars on which two upright oil tanks were awkwardly mounted. And it had, the records indicate, begun to ship its products to far-away places—"British Columbia, Sandwich Islands, Mexico, and Society Islands."

You can not dodge the conclusion, if you delve into the dusty books of the day, that the Pacific Coast Oil Co. must have had a concept of the oil industry as something to be built for permanence and future greatness. Its accounts and its letters have vanished—perhaps making one red flame in the fire that destroyed many of Standard Oil's most precious files in 1906—but what it accomplished in tangible form spoke most eloquently of its controlling purposes.

In the five years from '79 to '84, its investments, as calculated by President Felton, amounted to $2,500,000, of which $160,000 had gone into the Alameda Refinery. At that time the consumption of kerosene in California, as estimated by a contemporary authority, was valued at about $1,000,000 a year. Felton believed that California's domestic developments had decreased importations into the state by one-third; roughly, this meant that $350,000 was the total sale of California's own petroleum products. Thus, even though the Pacific Coast Oil Co. was selling the lion's share of this amount, it was investing, each year, approximately twice as much as its gross sales. Certainly there was some sort of vision, even though imperfect and incomplete, of the industry of the future that was building.

In 1884, President Felton wrote the California State Mineralogist:

"Companies actually producing oil (are): Pacific Coast Oil Company, San Francisco Petroleum Company, California Star Oil Works Company, Mission Transfer Company, Santa Clara Petroleum Company. Numerous companies have been formed, some have drilled shallow wells, but the above are all that have successfully produced oil."

These, in Felton's opinion, constituted the petroleum industry of the

state. And these companies were, with one exception, parts of the widening activities of the Pacific Coast Oil Co. Hittell, in 1882, had written:

"The rapid increase in the production of California petroleum within the last three years is due mainly to the enterprise of the Pacific Oil Company, an organization of San Francisco capitalists, under C. N. Felton, president, with D. G. Scofield as auditor and L. D. Fisk, secretary.

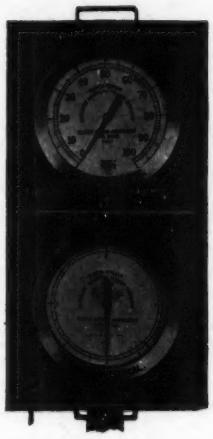
"They have combined with or succeeded to the Santa Clara Petroleum Company, the California Star Oil Works Company, the Standard Oil Company and the San Francisco Petroleum Company, so that they now nearly monopolize the producing and refining of petroleum in the state.

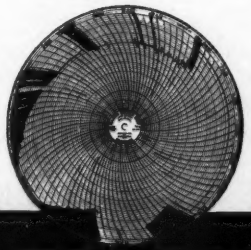
"They have obtained control of 64,000 acres of oil land in Los Angeles County, 62,000 in Ventura, and 32,000 in Santa Cruz, Santa Clara and San Mateo counties. These tracts include nearly everything supposed to be of much value for the production of petroleum . . . The Pacific Coast Oil Company have obtained these important results by large expenditures in getting possession of their land, boring wells, and providing the necessary machinery.

"At Alameda Point, the Pacific Coast Oil Company has the only large petroleum refinery on our slope. Their works, constructed in 1880, are extensive, complete and solid, and built upon plans prepared with the aid of the latest improvements for economy, dispatch of business, and security."

Hittell used two words—"capitalists" and "monopolize"—which any corporation today would unhesitatingly blue-pencil. But he redeemed himself when he used the expression "extensive, complete and solid."

A nicely turned phrase, Mr. Hittell! I think it describes the foundations laid for the Standard Oil Company of California as neatly as any three words in our language. In following articles we shall look at the structure—also extensive, complete and solid—that was built upon those foundations.





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1. Martin-Decker Weight Indicators have been instrumental in drilling all the wells in the world producing from below 9,000 feet.
2. Martin-Decker Instruments have been used on thirteen consecutive world record deep wells.
3. Martin-Decker Instruments always perform their task faithfully and accurately. Their excellent design is proved by achievements already accomplished and their ready acceptance by the Oil Industry at large. For the best in drilling control instruments choose Martin-Decker!

One of the last charts taken during drilling operations on Tidewater Associated Oil Company's (Associated Division) McGonigle No. 12, which bottomed at 10,569 feet. The Martin-Decker "Quintuplex" Drilling Control Instrument was used throughout drilling operations and the well was less than 1° off vertical.

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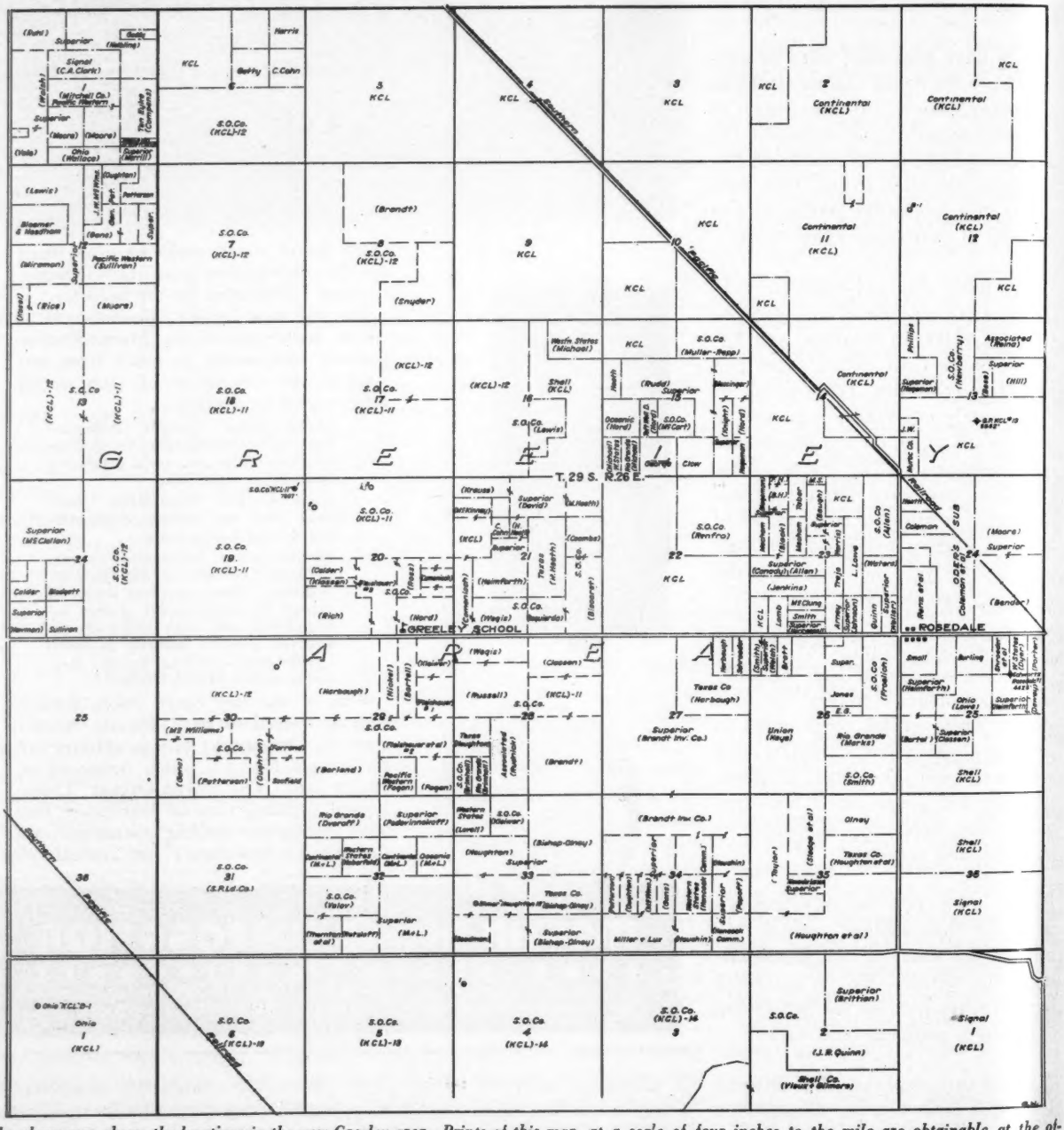
Field Development



The above map shows the locations in the new Greeley area. Prints of this map at a scale of four inches to the mile are obtainable at the offices of the California Oil World for $1.50 each.

San Joaquin Valley

Reserve Wells Get Oil Showings At Tejon

Probably no oil man has ever driven down the Grapevine into the San Joaquin Valley without wondering at least once whether or not some day oil would be found just to the east of the highway.

The Tejon Ranch has long been an object of interest to geologists and oil operators and it is expected that the present tests now drilling there will do a great deal to prove whether or not another great field is to be found in this area.

Reserve Oil & Gas Co. now has a successful water shut-off on both its wells, 33-2 and 33-3. No. 33-2 has been sidetracked at 3825 ft. and is redrilling. No. 33-3, the well which was spudded in December of last year, was expected to be placed on production some time this week.

Oil Sand Cored

Both wells cored oil sand. Reserve No. 33-2 found the sand body between 4454 and 4484 ft. and Reserve No. 33-3 found the sand between 4404 and 4431 ft. On a formation test a couple of weeks ago, 33-3 showed a tremendous flow of gas, various observers estimating the flow from 15,000,000 cf on up. The pressure on the tubing of this well ran about 1800 pounds, and the bottom hole pressure was about 2200 pounds.

At the present time Ohio Oil Co.'s Title Insurance and Trust No. D-1 is bottomed at 6662 ft., and the company is reaming preparatory to setting casing. It is understood that about 22 f. of sand has been cored in this well.

The two Reserve wells are about 620 ft. apart, with Ohio's well about two miles north of 33-2, the most northerly of the Reserve wells, which are located approximately one mile east of the Grapevine. Reserve Oil & Gas Co. has leased a total of about 7000 acres in the vicinity, about 3200 of which are on the structure being tested.

Arkelo Petroleum Well Gets Good Showings

Recent showings in Arkelo Petroleum Co.'s wildcat ten miles north of Bakersfield indicate that another San Joaquin Valley field of ranking importance may be brought in almost any day.

The Arkelo well, located in the Lerdo area, sec. 23, 28-26, was down 8250 ft. at last reports. At 7020 ft. a body of oil sand was encountered which lasted for about 45 ft. A geoanalyzer was run and while complete details are not available it is understood that the test was very encouraging. Whether commercial production can ever be obtained from this level, of course, can not be determined until a production test is made. At the present time, the plan is to deepen the well in the hope that more productive zones may be cored. From 7065 ft. on down to the bottom, brown shale with thin streamers of what was said to be highly saturated oil sand was encountered. On Wednesday considerable gas pressure was noted.

Large Area

Should this well be completed, geologists say that it would very likely develop into one of the largest fields in the state. The Arkelo well has aroused considerable interest due to its location and to the showings found there. The drill site is 10 miles north of Bakersfield, and about six and one half miles northeast of Standard's discovery well at Greeley.

A leasing campaign of tremendous proportions has been carried on in this area. Most of the acreage for miles to the north is blocked up solid. Upon his return from this district, one man stated that it was impossible to lease any land within several miles of Arkelo's well.

G. P. Arvin 1 Swabs Mud

General Petroleum Corp. still has hopes of completing its wildcat about a mile and a half south of Arvin. The well is bottomed at 7462 ft. and was plugged at 7300 and cemented through perforations at 6670. After cleaning out to 6492 ft., the well was bailed to 3500 without any rise of fluid. It was then cleaned out to 7282 ft. and at last reports the crew was swabbing muddy water with a little oil and gas. The well will now be put on the pump.

No Casing In KCL Well

Superior Oil Co. has established some kind of a record for itself by drilling its Rosedale wildcat to a depth of over 10,000 ft. without setting any casing other than 1347 ft. of 13⅜ surface pipe. The well is located some three miles south of Rosedale in sec. 11, 30-26. K. C. L. No. 8 is down 10,385 ft. at the present time. This is believed to be the greatest amount of open hole that has ever been drilled in the state. It is understood that the hole is unusually straight and particular care has been taken with the mud to preclude caving.

Wasco Well In Shale

Continental Oil Co.'s deep test near Wasco in sec. 8, 27-24 was down 9223 ft. in hard shale, at last reports. This well, K. C. L. No. A1, has been drilling through hard shale for the last 1800 ft.

Los Angeles Basin

Barnsdall Claims New Big Field At Saugus

Rancho San Francisco No. 1, Barnsdall Oil Co.'s wildcat located about 6½ miles west of Newhall, was given a production test last Sunday the results of which convinced the officials of the company that the well had actually found a new field.

The hole is bottomed at 6215 ft. with with 8⅝-inch casing set at 6160. Following the approval of the water shut off at 6160, the well on test showed a gas flow at the rate of about 2,500,000 cf with a spray of high gravity oil. It was said that the gas pressure built up rapidly during the test.

175 Ft. of Formation

Only 50 out of 175 ft. of formation was open. The decision was made to core ahead further through the producing zone, then set liner and test.

The well is located on the Newhall anticline, in sec. 26, 4s-17-w, a little more than six miles due west from Saugus on acreage belonging to the Newhall Land & Farming Co. Barnsdall has three leases in this area, but although the land is all leased from the Newhall Land & Farming Co. they are not adjoining leases. Barnsdall's total holdings amount to about 6000 acres, 4000 of which surround Rancho San Francisco No. 1, while the rest is divided between the other two leases. One of the leases is located immediately to the northwest of the 4000-acre lease while the other is approximately a mile and a half due north.

Other wells have drilled in this vicinity in the past, but none of the old tests were carried deep enough to be called conclusive. In 1924, Associated Oil Co. drilled a well on Newhall Land and Farming Co. property to a depth of 5789 ft. This well was located about a mile and three quarters due north of Barnsdall's present test, and while some showings were encountered, the well was abandoned. A few years ago, Superior drilled another test to 5128 ft. about four miles to the northwest, also without locating anything.

Production Rumors For Bell 100 Denied By Union

At the present time no well in California is being followed as intently as Union Oil Co.'s Bell No. 100, the company's deep test at Santa Fe Springs. The importance of a deep sand discovery in this field is well-appreciated by all the operators who have leases in the vicinity, at least one of whom moved heavy equipment into his property so that no time need be lost reaching any new zone the Union well might encounter.

Rumor Oil Sand Cored

Naturally there are the usual number of rumors drifting around about the project, all of which have been denied by the Union Oil Co. Probably the most widely-disseminated of the lot is the belief that Union has cored oil sand from 9128 ft. down to the present bottom, which is at 9156. Union denies that anything of interest has been found to date, and the company furthermore states that the other rumors regarding a production test which was supposed to have been made last Monday are equally false. Reports still persist, however, that the well has uncovered a formation which warrants a production test. The hole is now 1100 ft. below the deepest production in the field.

Union Oil Co. and The Texas Co. own considerable acreage in the immediate vicinity, but also represented are a number of smaller companies, including Bandini Petroleum, Wilshire Oil Co., Bellview Syndicate, Twin Bell Syndicate, Star Petroleum, Italo Petroleum and the majority of the majors.

Bandini has a 17-acre lease in the immediate vicinity, on which are five or six wells now bottomed around 7300 ft. which will undoubtedly be deepened if the deep test proves successful.

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22 Permits Granted For New Wells In Wilmington

The Wilmington area has been extremely active of late, with 22 permits to drill new wells in the district granted in recent days by the City Planning Commission.

George F. Getty completed "W" No. 1 on Jan. 22 for an initial production of 480 bbls. of 17.6 gravity oil per day. The cut was 1.4% and tubing and casing pressures were 85 pounds and 210 pounds respectively. The present production of the well through a 40/64-inch bean is 900 bbls. of 19.4 gravity oil per day, cutting 0.4%. There is still 85 pounds pressure on the tubing and the casing pressure has risen to 560 pounds, with 30,000 cf of gas.

Getty spudded "W" No. 2 on Jan. 27, and started building foundation for "W" No. 3 at a location 238 ft. south and 160 ft. west from the intersection of Sanford and F Streets.

Jaite No. 1 On Production

Gilmore Oil Co. Jaite No. 1 came in on Jan. 29, flowing at the rate of 450 bbls. per day through a 30/64-inch bean. The well was bottomed at 3550 ft.

Pacific Western Oil Co.'s Patton No. 1 was drilling ahead at 2050 ft. in oil sand and shale, and the company

was building foundations for Murphy No. 1. The new well is located 175 ft. south and 160 ft. west from the intersection of McFarland Ave. and E St.

Royalty Service Corp. has one well on production in the district with one drilling and three in various stages of getting ready to drill. Community No. 1 is flowing at the rate of 406 bbls. per day. The oil is 16.6 gravity, cutting 1.2% with 560 pounds pressure on the casing and 65 on the tubing. Banning 21-5 is drilling through sand and shale at 3120 ft. Community 2 is rigging up. The location is approximately 200 ft. south and 100 ft. east of the intersection of D and Banning Streets. The company is driving piles for Royalty Service Corp. 22-7-1, which is approximately 100 ft. west and 100 ft. north of the intersection of F and Flint Ave.

The company is also driving piles for Royalty Service Corp. Gilmore 23-7-1 at a point 125 ft. east and 125 ft. south of the intersection of G St. and Flint Ave.

Selegna Oil Co. is rigging up Silvaria No. 1 on sec. 28, 4s-13w, 350 ft. south and 250 ft. west of the intersection of Anaheim and McFarland.

A rig is standing for Sovereign Oil Co.'s Advance Truck No. 3, and for V. R. G. Wilbur No. 1. The location of the Wilbur well is near the corners of Rubideaux and Alameda Sts.

Union Pacific Railroad Co.'s Offset No. 1, which is being drilled by Hall-Baker, is building foundations. The location is 4163 ft. south and 817 ft. west from Anaheim and Henry Ford Aves.

Ciocca 1 Makes 1400 Bbls.

Richfield Oil Co. completed B. Ciocca No. 1 in Montebello on Jan. 29 for 1400 bbls. of 37 gravity oil. The well was originally bottomed at 7660 ft., but was later plugged back to 5660 where it was completed in the Upper Nutt Zone, from 5600 to 5660 ft. The tubing pressure was 175 pounds and the pressure on the casing 750. The gas output was about 500,000 cf. On Wednesday of this week the well was flowing through a 44/64-inch bean with a production of 1200 bbls. of 34 gravity oil per day, cutting 1%. Tubing pressure was 160 pounds with 900 pounds casing pressure. There was 600,000 cf. of gas.

Hildon Well Down 5931

Hildon Oil Co.'s Flood Control No. 1 is now bottomed at 5931 ft. This well is located on the northwestern extension of the Long Beach field. The well is now plugged back to 4700 ft., where the company plans to test some oil sand cored at that point. It is understood that if this sand should prove non-productive the well will be plugged back to 4300 ft., where another sand body will be tested.

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LOS ANGELES

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Coastal District

Petrol Corp. Completes Tognazzini 1 At 2480 Ft.

In the Gato Ridge area, The Petrol Corp. completed Tognazzini No. 1A on the pump Jan. 23. The well's initial production was approximately 100 bbls. per hour for 18 hours, from 2480 ft. The gravity of the oil was 14.9 and the cut was 0.4%. The well was then shut in for lack of storage.

Barnsdall is rigging up two wells in sec. 9, 8N-32W, Tognazzini No. 6 and Tognazzini No. 9.

O. C. Field Gasoline Co. Continental No 1 topped the miocene at 2150 ft. and was drilling ahead at 2275. Some oil sand has been cored.

Stewart Carter Oil Co. No. 1 is drilling through gray shale at 2010 and Benj. A. Moyle is rigging up in sec. 4, 8N-32W.

Union Sugar 1A at 5127

In the district near Santa Maria, E. H. Moore's Union Sugar No. 1A is redrilling at 5127 ft. The hole is bottomed at 8020 ft. and the fish was cemented in place at 4900. The well was sidetracked and is now understood to be back in the old hole.

Fernandez Tests WSO

A. N. Macrate's Fernandez No. 1 was testing the water shut-off after having cemented 8-inch casing at 3320 ft. A formation tester was run last week and while the tester was being run the well started to flow at a rate estimated to be in excess of 2400 bbls. per day. It is planned to drill ahead to basement in order to take in as much of the producing formation as possible.

This well is located on the northeast quarter of sec. 26, 10n-34w and its productiveness further proves up the westerly flank of the South Santa Maria field.

Adams Redrills Potter Well

John M. Abrams and associates are now redrilling Potter No. 2 on a 5-acre portion of the Standard Oil Co. Potter Community lease at Sepulveda and Ocean Ave., Torrance. The well was abandoned by Standard in 1928 at 3640 ft. The present organization is redrilling at 900 ft. Potter No. 2 is an offset to C. C. M. O.'s Del Amo well and is north of the Hunt well.

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The life of a specialty determines whether it is classed as a perishable tool or considered as equipment. Conventional Rotary Hose has always been classed as a tool because of its short life and uncertain performance under high surging pressures.

Chiksan All Steel Rotary Hose is definitely equipment because it possesses the long life and strength inherent in steel. Consequently depreciation is very low. Upkeep is slight, as under normal conditions two or three repackings per year is the only maintenance required. The double duty feature—good for both "pressure drilling" it's unaffected by oil) and the usual mud circulation make it an investment. Ball Bearings and 17 swivel movements, together with light weight, make Chiksan All Steel Rotary Hose the modern equipment for modern conditions. No scissor Joints. Patented packing sets reduce friction and give positive sealing. Get the positive safety factor obtainable only in a Chiksan All Steel Rotary Hose.

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FULLERTON, CALIFORNIA — GULF ENGINEERS INC. HOUSTON, TEXAS

State Drilling Report

Field	Company	Well No.	Sec.	Twp.	Range
NEW WELLS					
Coyote Hills	Standard Oil Co. Emery	62	13	3 S	11 W
	Dolicia Oil Co. Anaheim-Union	2	24	3 S	10 W
Wilmington	Basin Petroleum Co.	1	28	4 S	13 W
	Gauthier Oil Co. Classification Yard	2	27	4 S	13 W
	Sovereign Oil Corp.	3	33	4 S	13 W
	Union Pacific RR. Co. U. P. Offset	1	4	5 S	13 W
El Segundo	Republic Petroleum Co. Republic El Segundo	5	18	3 S	14 W
	The Texas Company Security	1	18	3 S	14 W
	Shell Oil Co. Reyes	90	33	3 S	13 W
Dominguez	Re-Mine Oil Co. Humble	2	34	5 S	11 W
Huntington Beach	The Petroleum Co. Wilson	5	2	6 S	11 W
	The Texas Company Brown	8	11	6 S	11 W
Bardsdale	The Texas Company Shiells	132	4	3 N	19 W
Sunset	Pattiway Oil Corp.	1	12	11 N	24 W
	Hallmark Oil Co.	6	25	12 N	24 W
Midway	Shell Oil Co. McKeon Fee	1	22	32 S	23 E
	Birch Ranch & Oil Co. Goldman	2	22	32 S	23 E
	Honolulu Oil Corp., Ltd.	26	14	32 S	24 E
	Standard Oil Co.	29	23	32 S	24 E
Kern River	Apex Petroleum Corp.	10-1	10	28 S	27 E
	Seskayden Oil Co. Seskayden-Sesnon	3-A	17	28 S	27 E
	Pioneer Oil Co.	3	18	28 S	28 E
	California Star Oil Co.	7-80	22	28 S	27 E
	Robert S. Wight	1	13	28 S	27 E
Round Mountain	California Western Oil Co.	21	7	28 S	29 E
	California Western Oil Co.	22	7	28 S	29 E
Kern County	Signal Oil & Gas Co. K. C. L.	A-1	21	30 S	27 E
	Standard Oil Co. K. C. 11	2	20	29 S	26 E
	Standard Oil Co. K. C. 12	1	30	29 S	26 E
	Standard Oil Co. K. C. 14	1	4	30 S	26 E
Mountain View	Wood-Callahan Oil Co. Wells	3	25	30 S	28 E
	Standard Oil Co. Mabry	4	18	30 S	29 E
	Mohawk Petroleum Co. Earl Fruit Co.	3	4	31 S	29 E
Poso Creek	Standard Oil Co.	3	9	28 S	27 E
	Golden Bear Oil Co. Grimes	5	32	27 S	27 E
Fruitvale	E. J. Kasey & Assoc. Kasey	1	23	29 S	27 E
	Harry H. Magee Gilmore	1	23	29 S	27 E
	Magnet Oil Co. Anderson	4	21	29 S	27 E
Kettleman North	Standard Oil Co.	78	3	22 S	17 E
Solano County	Amerada Petroleum Corp. Drouin	1	26	4 N	2 E
Imperial County	National Dry Ice Corp.	5	2	11 S	13 E
Inglewood	Country Club Oil Co. Country Club	1	19	2 S	14 W
Richfield	Union Oil Co. Coyle	8	29	3 S	9 W
	A. H. Joseph Joseph-Wagner	1	29	3 S	9 W
Torrance	Leora Oil Co. Leora	1	31	3 S	14 W
	P. W. Willett P. W. Willett	1	6	4 S	14 W
Orange County	Shell Oil Co.	1	23	4 S	10 W
DEEPEN OR REDRILL					
Seal Beach	Tide Water Associated Bryant	21	11	5 S	12 W
Long Beach	Davis Investment Co.	16	29	4 S	12 W
	Lee Grumbaugh Locke	36	13	4 S	13 W
	Shell Oil Co. Babb & Tucker	2	29	4 S	12 W
	Shell Oil Co. Cresson Comm.	8	19	4 S	12 W
	A. S. Johnston Drilling Co.	17	24	4 S	13 W
	The Texas Company Field	7-A	19	4 S	12 W
	Graham-Loftus Oil Corp. Dodge	2	24	4 S	13 W
	Signal Oil & Gas Co. Liebert Comm.	1	24	4 S	13 W
Torrance	Weber-Butler Oil Co. Gilman	1	16	4 S	14 W
	Superior Oil Co. Torrance	46	19	4 S	13 W
Santa Fe Springs	Star Petroleum Co. Star	2	6	3 S	11 W
	Hathaway Co. Hathaway	2	6	3 S	11 W
	J. A. Smith Santa Fe Brunson	3	6	3 S	11 W
Elk Hills	Standard Oil Co.	58	35	30 S	24 E
Mountain View	Hancock Oil Co. Miller	5	14	30 S	28 E
Kettleman North	Union Oil Co. King	2	29	21 S	17 E
Brea-Olinda	C.C.M.O. Co.	98	9	3 S	9 W
Huntington Beach	Benito-Huntington Oil Co.	1	10	6 S	11 W
Ventura	Shell Oil Co. Gosnell	34	28	3 N	23 W
Kern River	Italo Petroleum Corp. Cauley	14	16	28 S	27 E
ABANDON					
Long Beach	V. F. Stabeck Max Pray	4	24	4 S	13 W
	McBroom Oil Co. Jeannerett	1	30	4 S	12 W
	Morton & Elder Hinshaw	1	19	4 S	12 W
Santa Fe Springs	General Petroleum Corp. Santa Fe Comm.	86-B	6	3 S	11 W
	General Petroleum Corp. Santa Fe	12	5	3 S	11 W
	General Petroleum Corp. Santa Fe	13	5	3 S	11 W
	Standard Oil Co. Walker Comm.	23	6	3 S	11 W
Los Angeles County	Universal Consol. Oil Co. Carrell	1	36	3 S	14 W
	Honolulu Oil Corp. Montebello	1	14	2 S	12 W
Coyote Hills	Standard Oil Co. Murphy-Coyote	34	18	3 S	10 W
Bardsdale	The Texas Company Shiells	75	4	3 N	19 W
Mesa	L. R. E. Oil Co. Knott	1	28	4 N	27 W
Santa Maria Valley	Union Oil Co. Moretti	2	24	10 N	34 W
Kern County	East Edison Oil Co.	1	21	30 S	30 E
Round Mountain	California Western	18	7	28 S	29 E
Playa Del Rey	Anglo-American Pet. Champ	1	26	2 S	15 W
Midway	Tide Water Associated	43	34	31 S	23 E
	Tide Water Associated	53	34	31 S	23 E
Mountain View	Barnsdall Oil Co. Mott	1	31	30 S	29 E
	Hillman-Long Inc. Whittekin	1	34	30 S	29 E

Summary	Last Two Weeks	Previous Two Weeks	To Date This Year	To Date Last Year
Total New Wells	47	43	90	70
Total Deepened or Redrilled	21	27	48	57
Total Abandoned	20	18	38	41

California Crude Oil Production

Two Weeks Ending January 30

DAILY AVERAGE

Field	January Daily Quota	Average Daily Production	Excess
San Joaquin Valley			
Belridge—North	11,495	15,629	4,134
Belridge—South	1,970	1,835	*135
Buena Vista	16,930	15,335	*1,595
Coalinga—East	11,690	10,211	*1,479
Coalinga—West	5,335	5,615	280
Coffee Canyon	4,945	5,084	139
Edison	5,235	4,854	*381
Elk Hills	8,120	8,703	583
Fruitvale	8,060	8,905	845
Kern Front	10,200	11,077	877
Kern River	3,645	2,535	*1,110
Kettleman—North Dome	77,150	78,398	1,248
Lakeview	3,210	11,608	8,398
Lost Hills	4,150	3,766	*384
McKittrick	3,670	1,672	*1,998
Midway-Maricopa	35,285	40,040	4,755
Mount Poso	15,720	18,103	2,383
Mountain View	20,755	21,753	998
Round Mountain	6,965	7,208	243
Ten Section	675	996	321
Other Fields	3,275	3,530	255
TOTALS	258,480	276,857	18,377
Coastal District			
Elwood	10,575	9,590	*985
Santa Maria	5,335	5,065	*270
Ventura Avenue	29,935	33,835	3,900
Other Fields	10,805	12,318	1,513
TOTALS	56,650	60,808	4,158
Los Angeles Basin			
Alamitos Heights	1,490	1,640	150
Brea-Olinda	7,970	8,334	364
Coyote—East	2,270	3,231	961
Coyote—West	7,795	7,248	*547
Domingues	23,495	22,481	*1,014
El Segundo	590	2,142	1,552
Huntington Beach—New	18,390	21,205	2,815
Huntington Beach—Old	13,780	16,314	2,534
Inglewood	13,040	13,344	304
Long Beach	59,585	62,538	2,953
Montebello & Extension	8,425	8,931	506
Playa Del Rey	10,275	10,744	469
Richfield	6,930	7,217	287
Rosecrans-Athens	1,980	2,400	420
Santa Fe Springs	41,135	42,661	1,526
Seal Beach	7,325	7,852	527
Torrance-Hermosa and Extension	7,650	8,190	540
Wilmington	975	1,037	62
Other Fields	2,160	2,184	24
TOTALS	235,260	249,693	14,433
STATE TOTALS	551,000	587,358	36,358

*—Shortage.

National Deepens Gates 4

National Oil Co. is deepening Gates No. 4, Kern Front, to approximately 1945 ft., from present bottom around 1700 ft. National's Universal No. 4 was brought in last week for an estimated yield of 200 bbls. daily from 1945 ft.

Dyak Plans Drilling Activity

With about 200 acres under lease in T 29S-R20E, Dyak Oil Properties, Ltd., formerly the Dyak Exploration Co., plans to commence drilling operations in about two months. Walter R. Hulsey, of Fillmore, Calif., is in active management of the company. Mr. Hulsey is now in Ventura on business in connection with the project.

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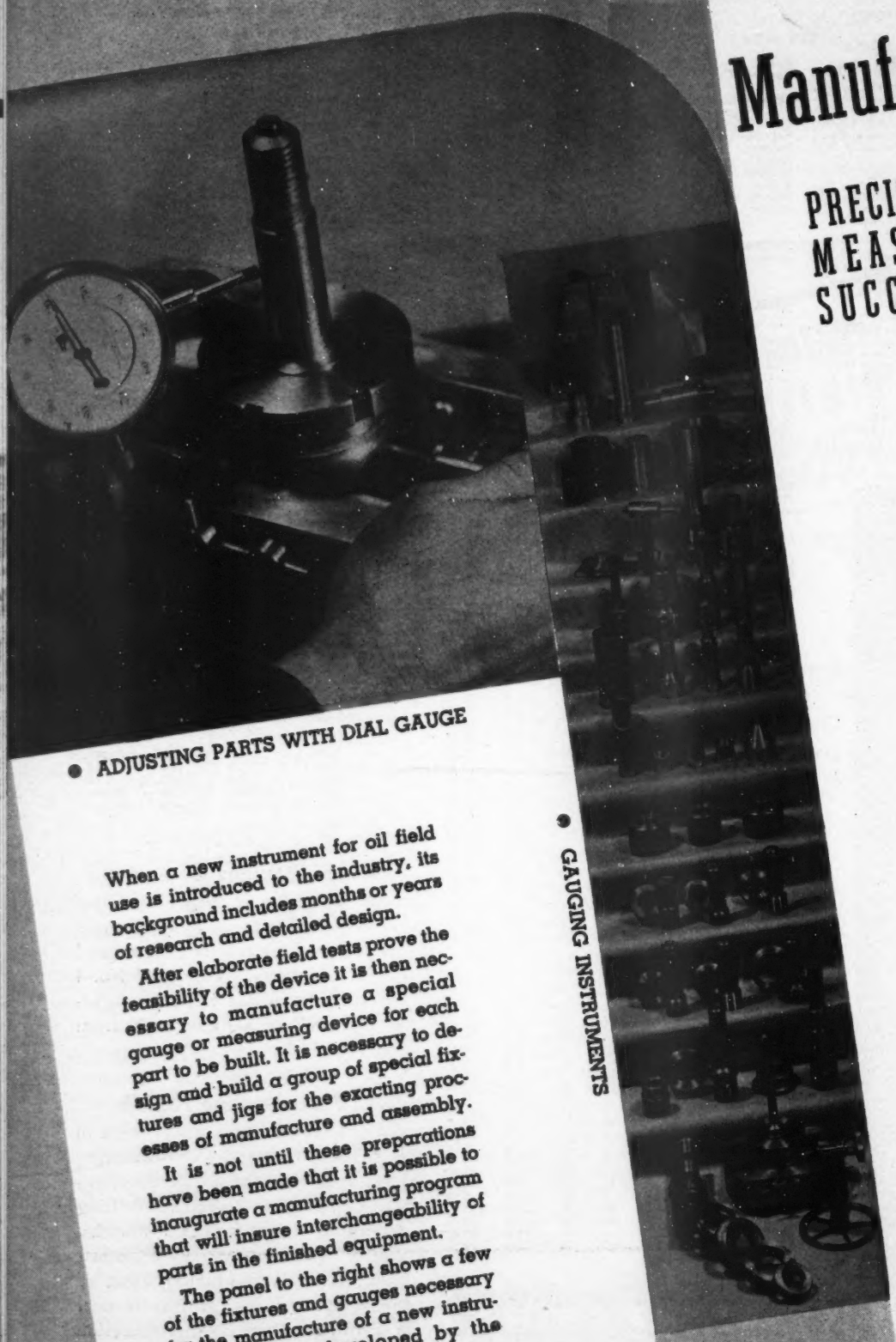


● ADJUSTING PARTS WITH DIAL GAUGE

● GAUGING INSTRUMENTS

When a new instrument for oil field use is introduced to the industry, its background includes months or years of research and detailed design.

After elaborate field tests prove the feasibility of the device it is then necessary to manufacture a special gauge or measuring device for each part to be built. It is necessary to design and build a group of special fixtures and jigs for the exacting processes of manufacture and assembly.

It is not until these preparations have been made that it is possible to inaugurate a manufacturing program that will insure interchangeability of parts in the finished equipment.

The panel to the right shows a few of the fixtures and gauges necessary for the manufacture of a new instrument recently developed by the Hewitt-Kuster Company.

RGROUND INSTRUMENTS

During the last few years the oil producers have discovered that the use of precise and accurate underground instruments will save them thousands of dollars in production costs.

Our photographer brings you a pictorial record of his visit to the Hewitt-Kuster Company's instrument shop in Long Beach. This firm is one of the few who design and manufacture oil production instruments exclusively.

In addition to a group of master instrument and clock makers, it was found that a staff of designers are continuously working on new clocks and instrument designs.

The instruments built must not only be precision devices, but must withstand the abuse of oil field use and high underground temperatures. This necessitates extremely careful workmanship and design.

These photographs show some of the instruments and gauges, the machinery and equipment, that are employed by the Hewitt-Kuster Company to insure the dependability of their products.

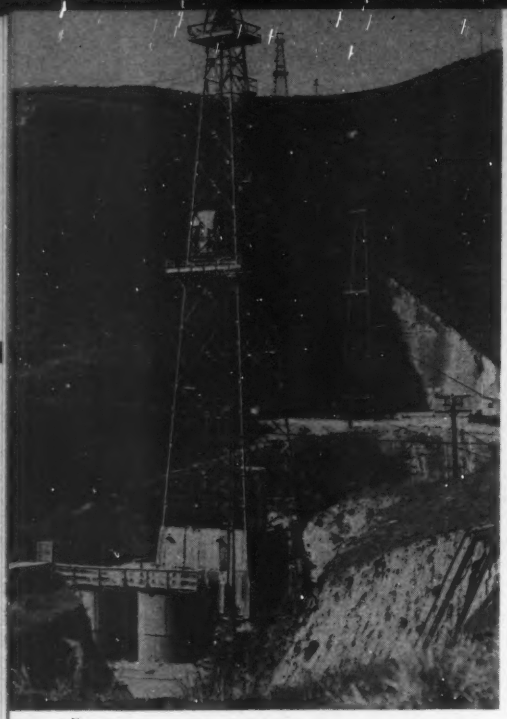
• WEIGHING TIMING SCREWS

• SINGLE SHOT ANGLE UNIT

• CHECKING FULL FLOATING COMPASS

• CHECKING AMPLIFIED CLOCK SOUNDS

DETAIL LAYOUT



The world's deepest producing well.

Associated McGonigle No. 12 World's Deepest Producer

Freedom from drilling difficulties, performance of regular rotary equipment, straightness of hole outstanding. Initial production from 10,569 ft. 536 bbls. per day.

"Just another oil well," said the Associated Division of the Tidewater Associated Oil Co. when on January 17 McGonigle No. 12 in Ventura Avenue was completed from 10,569 ft. as the world's deepest commercial producer. That this was the first time oil had been produced from a depth greater than two miles was in itself an event of interest to the California oil industry, but in the simple statement of the operating company that to them this was "just another oil well" lies the really significant story.

With production from what once were first line fields rapidly falling off, with expanding gasoline sales daily requiring larger amounts of crude oil, California operators are well aware of the need for seeking new production at levels which were commercially impracticable a few years ago. Greeley, Ten Sections and Padre Canyon represent outstanding recent developments, but while wildcats in virgin areas are seeking new and until now unimagined fields, deep tests are also probing the earth underneath some of the state's most prolific fields, attempting to find there the sand bodies that will supply the refineries of the future with their crude requirements.

Freedom From Trouble

Therefore, it is not so much of interest to the industry in general that Associated should complete **one** well at such great depth. The significant fact lies in the advancement of oil field materials and equipment to the point where such wells are commercially practicable. This equipment, in the hands of experienced drillers and supervised by engineers familiar with deep-drilling projects, proved itself capable of commercial operation at great depths; for McGonigle No. 12, unlike similar deep wells, was remarkably free from mechanical difficulties.

McGonigle No. 12 is located on Associated's McGonigle lease in the Ventura Avenue field. The drill site is spotted in Hall Canyon, in the far eastern side of the field and on the northern flank of the anticline. Only McGonigle No. 5 is further north.

Well's Start

The well was spudded Feb. 6, 1936, and was completed Jan. 17, 1937. The drilling time was 338 days, after allowing for seven days spent waiting for drill pipe. Regular rotary equipment was used throughout, including three mud pumps, Associated's usual practice in drilling deep ones at Ventura Avenue. When the company originally went into the hole, the intention was to drill the well to 9500 or 10,000 ft. and heavy equipment was installed to carry the project to that depth. Some showings were encountered above the present zone of production, with oil sands cored just below 8100 ft. and between 9500 and 10,000 ft. Heavy gas pressures were experienced in the last thousand feet of the hole, slowing up the work considerably.

Casing Record

Some figures are of interest in reviewing the well's drilling history. A 24½-inch hole was carried to 848 ft., at which point the 18⅝-inch surface string was cemented on Feb. 15. Seventeen-inch hole was then drilled to 6025 ft. with 13⅜-inch casing cemented at 6018 on May 27. From 6025 to 7900 ft. the hole size was 12⅜, decreasing then to 12¼ to 8102 ft., where the 9-inch casing was cemented on Aug. 29, 1936. For nearly 2000 ft., 7¾-inch hole was drilled to 10,007 ft., and on Dec. 15 of last year, 5¾-inch casing was cemented at 10,007. From that level, employing 2½-inch drill pipe, a 4¾-inch hole was drilled to bottom, and on Jan. 14, 1937, a 4-inch liner, including 539 ft. of perforations, was landed at 10,556 ft.

The well was placed on production Jan. 17, 1937, and in 23 hours flowed 533 bbls. gross, 514 net, of 30.3 gravity oil cutting 3.6% with 430,000 cf of gas through one 55/64-inch bean. There were 20 to 30 pounds pressure on the tubing, and the casing pressure was 500 pounds. The flow was at the rate of 536 bbls. per day.

At the present time the well is on compressor, and is doing 300 bbls. of 30.3 gravity oil per day, cutting 1% with 140 pounds pressure on the tubing, 425 on the casing and 276,000 cf of gas.

McGonigle No. 12 is unusually straight for a deep well, with the hole was bottomed only 130 ft. off vertical. Associated's favorite instrument, the acid bottle, was run all the way down. From the mechanical standpoint, this is probably the outstanding characteristic of the well. Drilling a straight hole in Ventura Avenue, a field in which the dips are very pronounced, is difficult under the best of circumstances, and Associated's feat in drilling to over two miles with the bottom of the hole only one degree off vertical is an achievement of which the company can well be proud.

Cooperation With Manufacturers

It has long been the practice of the Associated Oil Co. to work with the manufacturers wherever possible. The company's production department believes that in this way the manufacturer will be able to keep in touch with the company's needs and consequently enabled to supply the company's requirements more effectively. It is in this manner, too, that the manufacturer can pass on to one oil company the methods learned from another, so that a constant interchange of mechanical and technical ideas is carried on, benefiting, in the end, all who participate.

When Associated was once faced by an unjustifiably heavy expenditure for wire line, the company selected one of their production men to supervise the use of wire line on all the company's rigs at Ventura. The information he accumulated resulted in lowered wire line costs for the oil company while the manufacturer received a clearer understanding of the company's uses for its product.

Another example of this practice is shown by the close cooperation with which Associated has worked with the manufacturers in an effort to discover just the right kind of materials which will form the mud most suitable for the company's deep test operations. An expert was placed on the job at Ventura to check the mud used in all the company's wells. This man, with his two assistants, has experimented and tested various constituents in close cooperation with leading weight material manufacturers.

In running the 5¾-inch pipe, the crew turned in a really remarkable performance by running 10,007 ft. of casing in a total elapsed time of eight hours and forty-five minutes. The actual running time was only seven hours and fifteen minutes, which was even more remarkable in view of the fact that the string was made up by hand. The pipe was floated in. No special preparations were made because the excellent condition of the hole made such preparations unnecessary.

The really fine condition of the hole was equally apparent when the liner was set, for it was possible to turn the pipe by hand. Ten lines were used in drilling and a weight indicator was used during the entire drilling period. Blowout prevention consisted of the conventional hookup in the cellar, with a bug on top. The bug was used only once or twice despite the fact that weight materials were kept out of the hole.

Crew

Associated has made a practice, in its deep wells, of keeping the same drilling crews on the job until completion of the project. The drilling foreman who completed the well was Ben Johnson, and the drillers were T. R. Tunnell, A. C. Prairie, Frank Kimbrough, I. MacKay and W. B. Lee.

The engineering staff contributed a great deal to the smoothness with which the well was carried to its great depth. The project was under the supervision of J. A. Jones, production manager for Associated. Joseph Jensen is chief petroleum engineer for the company. The staff at Ventura, directly responsible for the well, consisted of Martin Mears, superintendent, F. W. (Pretz) Hertel, assistant superintendent, and Quay Diven, petroleum engineer.

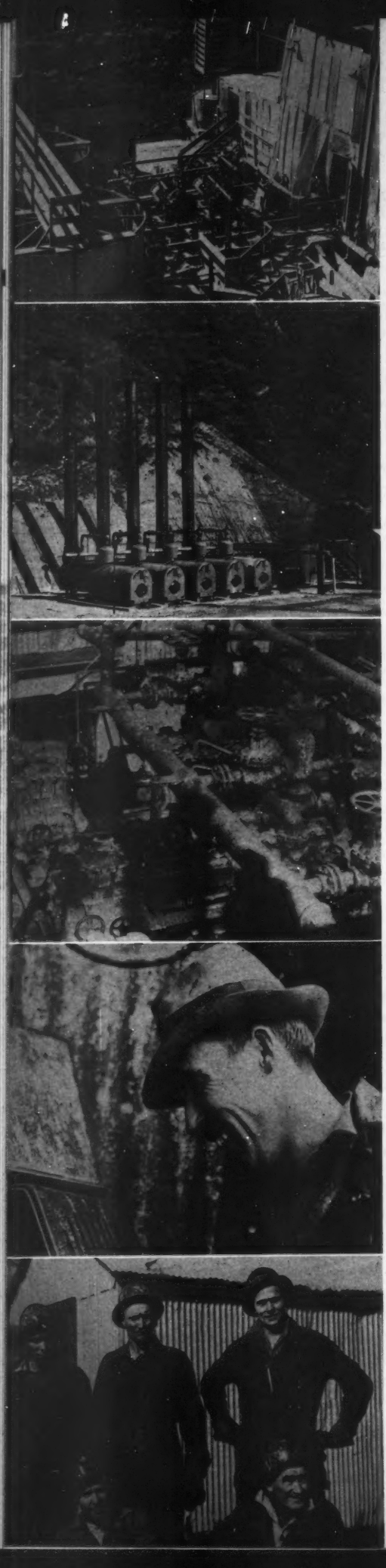
Other Records

Holding the record for the deepest producer in the world is nothing new to Associated. Back in 1921, the company began its series of record-breaking holes with the completion of Butterworth No. 1 in Santa Fe Springs on Nov. 12. This well was only 4683 ft. deep, a remarkable contrast to the two miles nine feet at which McGonigle No. 12 is bottomed.

But the log of the Santa Fe well reveals even more striking discrepancies. Butterworth No. 1 was spudded in on Jan. 13, 1920 and was worked on for the following two years. Two fishing jobs held up the progress of McGonigle No. 12. One fishing job after another postponed the completion of Butterworth No. 1. A 19½-inch hole was started, and only two strings of casing were set, 10-inch at 2888 ft. on April 7, 1920, and 6½-inch at 4673 ft. on Oct. 8, 1921. The well was finally completed at 4683 ft. for 333 bbls. of 36.5 gravity oil, and was the deepest producer in the world at that time.

In June, 1929, Clarke No. 2, another Santa Fe Springs record breaker, was drilled to 8165 ft. Santa Fe Springs relinquished the record to Ventura Avenue on April 28, 1931, when Lloyd No. 57 was completed at 8823 ft. A little more than a year later, Lloyd No. 83 reached the depth of 9710 ft. It was a little more than three years before another Ventura Avenue well was sunk to a greater depth, when Lloyd No. 131 was completed at 9846 ft., on Aug. 3, 1935.

It was only on Jan. 7 of this year that The Texas Co. announced the completion of the deepest producing oil well in the world, Rigolets Fur Co. No. 5, in the LaFitte field, Louisiana. This well was bottomed



at 10,244 ft. For ten days the record stood, only to return to California on Jan. 17 when Associated completed McGonigle No. 12 325 ft. deeper than the Louisiana titleholder.

Significance of McGonigle No. 12

Geologically speaking, the well found nothing startling. It is bottomed in the Fourth Lloyd Zone and is higher stratigraphically than some of the wells surrounding it. Whether or not Associated will drill additional wells to this depth is problematical, but the company feels that it has been well repaid by the fund of information acquired in drilling the deep producer.

Furthermore, it is quite possible that the successful completion of McGonigle No. 12 at a little below two miles may assist in bringing about an entirely new type of oil recovery in California. Fifteen- and twenty - thousand - foot wells may well be left to the future, but the facility with which the production staff of the Associated Oil Co. drilled this well to its present depth shows that production can be developed from this level, and no doubt profitably. Geological opinions pretty well agree that underlying the present productive fields of Santa Fe Springs, Long Beach, Huntington Beach, Belridge, and many others, there is an excellent chance that production may be found that will stimulate these fields to undreamed of activity for many years to come.

Freak wells and record-breaking performances are one thing, but the lasting effect of a series of intelligently planned and masterfully executed engineering achievements like these deep wells drilled by Associated at Ventura Avenue will still be felt when the well logs themselves are filed and forgotten in some dusty storeroom.

Top to bottom: Mud settling tanks, mud screens, and pumps. Boiler battery. Slush pump manifolding. Loud speaker system from derrick floor to fourble board. Crew, left to right, standing: N. B. Lamp, E. J. Russell, J. W. Darby. Kneeling, left: F. N. Kimbrough, driller; M. J. Barger.

Gas Pressure Extreme In Buttes Wildcat

After a considerable battle, The Buttes Oilfields, Inc., No. 4, 12 miles west of Marysville, was brought under complete control last week and is being made ready for an early production test, with the bottom at 5093 ft.

On Jan. 11 the drill entered at 5070 ft. the expected high-pressure gas zone tapped in Buttes No. 3, 2250 ft. south, at 5183 ft. Two days later the gas pressure blew the entire column of drilling mud out of the hole. Mud was thrown more than 100 ft. in the air and, from the blow-off opened by Driller Ray P. Sprague of Bell & Loffland to relieve the strain, more than 200 ft. laterally from the derrick. Weight materials were rushed to the field and into the hole, which was brought under control.

Ground Erupts Mud

Pressure was so marked that drilling mud was forced up through solid ground, surrounding the 300 ft. of cemented casing in the top of the hole, forming half a dozen miniature mud-volcanoes at various points around the rig.

President O. G. Green, on a flying trip to Los Angeles, purchased 1600 ft. of 11¾-inch casing. This has been run inside the 300 ft. already in the hole and cemented full-length as an added precautionary measure to combat the unprecedented pressure. A conception of what it may be when gauged can be gained from the fact that in none of the new producing gas fields in the Sacramento and San Joaquin valleys—Rio Vista, McDonald Island, Tracy or Merced—where gas yields have ranged from 35,000,000 to over 80,000,000 c.f. per day, has gas shown in the ditch while drilling. At Buttes No. 4, prior to the blowout, gas showings in the ditch were marked.

SCHLUMBERGER

Surveys

ere used by Associated Oil Company from the oe of the first surface string at 850 feet to 0,537 feet, in drilling its newly-completed 0,569 foot McGonigle No. 12 Well in the entura Avenue Field.

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Associated Oil Company McGonigle No. 12, Ventura Avenue Field, Californie

SCHLUMBERGER WELL SURVEYING CORPORATION

December Production 18,908,891 Bbls.; 1936 Output 214,773,315 Bbls.

Daily average 17,409 bbls. more in 1936 than in 1935. Lower average initial production mainly due to the drop in initial of new wells on Kettleman North Dome.

The A.P.I. final figures for December show a total of 18,098,891 bbls. for California for the last month of 1936. The daily average for the month was 583,835 bbls. per day, an increase of 1758 bbls. daily over the daily November production, which was 582,077 bbls. The increase in total production in December as compared with November was 636,575 bbls., November production being 17,462,315 bbls.

With the final bulletin for the year, the A.P.I. has issued a summary of production statistics for the entire year, which show that California produced a total of 214,773,315 bbls., maintaining a daily average of 586,812 bbls. Total production during 1935 was 207,832,131 bbls., a daily average of 569,403 bbls. California production increased, therefore, 6,941,184 bbls. during 1936 as compared with 1935, a daily average gain of 17,409 bbls.

Completions

There were 802 completions during 1936, as against 763 in 1935, an increase of 39 wells for the past year. Of the 802 completions during 1936, 12 were in gas areas. The 790 oil wells had an initial of 374,002 bbls., 473.42 bbls. per well. During 1935, 34 gassers were completed, leaving 729 oil wells, which had a total initial of 660,980 bbls., or 906.70 bbls. per well.

Kettleman Drop

Probably the most significant feature of the average well initial is the record of what has happened in the Kettleman Hills North Dome. During 1935, 35 wells were completed, the average initial being 4216.17 bbls. per well, while the initial production of the 52 wells drilled during 1936 was only 1554.36 bbls. per well. From the end of 1935 to the end of 1936, therefore, the initial production of Kettleman wells dropped approximately 63%, or to a figure only 37% as great.

New Fields

Three new oil fields were discovered during the year. They are: 10 Sections, with a total production of 188,464 bbls. for the year; Greeley, with 3960 bbls.; El Segundo, with production of 149,149 bbls. The new production from these fields totaled 341,573 bbls. for the year, which is a far cry from the necessary new production if the state is to maintain its place as an oil producer. As mentioned above, total production was 214,773,315 bbls., which added 715,090 bbls. of oil to storage, leaving 214,058,225 bbls. as the actual yearly demand. If that amount of oil is to be used each year, obviously that amount of new oil must be discovered each year, hence, the state fell behind by 213,716,652 bbls. There is then no need to explain the active wildcatting program being carried on all over the state, as well as the several deep tests in various old fields.

In addition to the three new oil fields, four gas fields were discovered during the year. They are: Buena Vista Lake, Chowchilla, McDonald Island, and Rio Vista.

Storage

December storage figures show a gain of 1,132,431 bbls. in total stocks during the month, the major portion of which was in gasoline stocks. The graph on the facing page of this issue shows the comparative levels of all kinds of oil in storage for the entire year.

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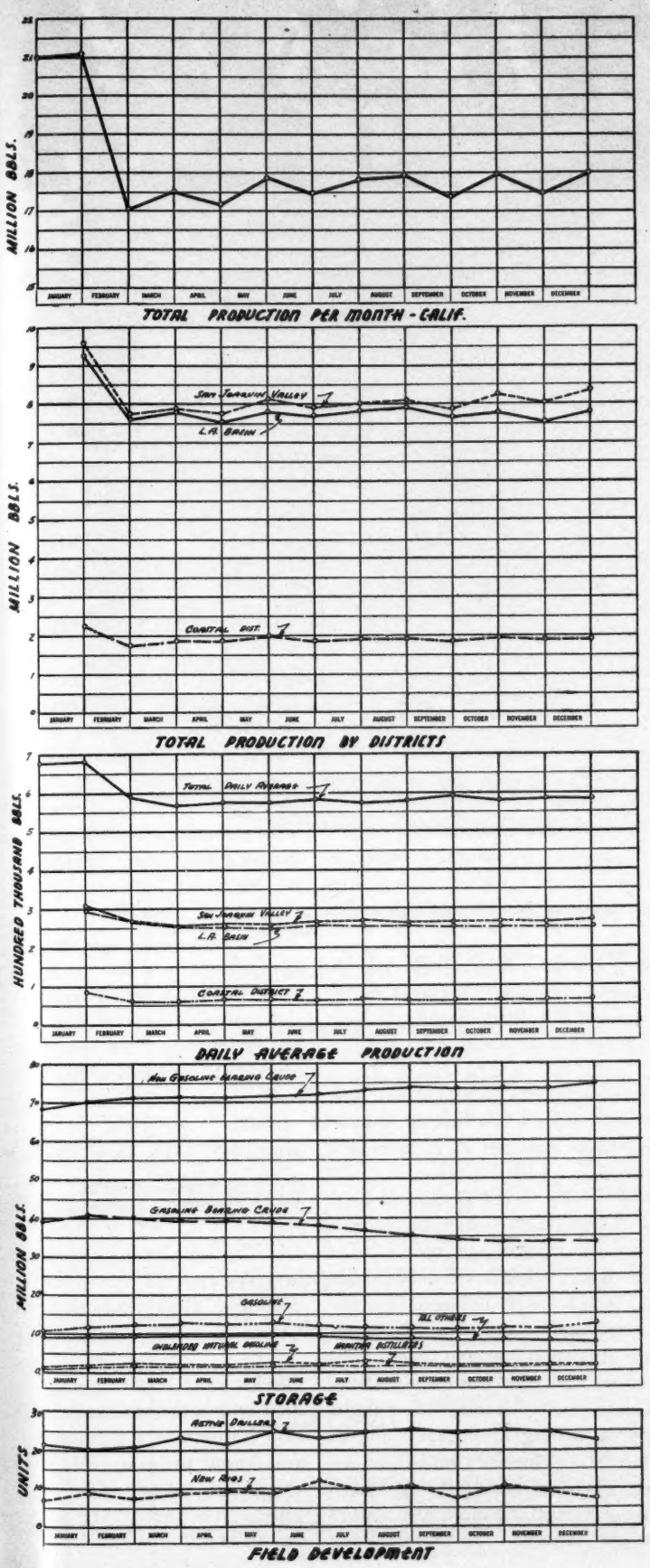

Pet. Sec. Spuds Greeley Well

Petroleum Securities Co. has foundations in for a well located 330 ft. south and 330 ft. west from the northeast corner of sec. 23, 29-25, approximately two miles due west from Standard Oil Co.'s discovery well in Greeley, which is still flowing through a ⅛-inch bean at the rate of 225 bbls. of 37.1 gravity oil per day, cutting 0.1%. The pressure on the tubing is 1075 pounds, the casing pressure is 2300 pounds and the well is making about 159,000 cf of gas.

Cantua Well In Oil Sand

Western Gulf Oil Co. has drilled S. P. Land No. 3 to 8500 ft. in the Cantura Creek area, sec. 3, 17-15, about 20 miles north of Coalinga. It has been reported that 40 ft. of oil sand has been found on the bottom. Seven-inch casing is now standing cemented at 8460 ft. and the company is expected to start swabbing and bailing toward the latter part of this week. Western Gulf has several thousand acres under lease in this area, and has drilled two wells near here previously, both of which were eventually abandoned because of mechanical difficulties.

Wilmington Well Starts

Dr. Joseph S. Silveria has erected a derrick at McFarland and Anaheim Ave. in Wilmington. The well, to be known as Silveria-Lockquier No. 1 was scheduled to spud in late this week. Jimmie Howard, of the Selegna Oil Co., will supervise the drilling.

Leora Oil Setting Casing

The Leora Oil Co., which owns three drill sites 2 blocks east of Prospect on 10th St., Hermosa Beach, is setting 13⅜-inch surface casing at 882 ft. This well, a semi-wildcat, is seeking oil sand immediately above the schist.

Laugh this off!

We understand that in his spare moments Lester Metcalf is addicted to weaving—one of the most profitable hobbies known. Jack Dempsey was also a weaver, and look at the money he made.

And Jim Craig, the Jacoby of the petroleum industry, says a bridge party is the only social affair that may be properly termed a shindig.

"I don't mind a guy getting fidgetty late in the afternoon," says Frank Coyle, "I don't even mind him taking out his watch and looking at it. But when he takes out his watch, stares at it, puts it to his ear, and then shakes it—it gets me."

Marion Dice now tells a yarn about a petroleum expert who was giving evidence in a suit some time ago, and lost his temper. He became so emphatic in his criticism of the whole procedure that after admonishing him several times the judge had no recourse but to fine him $10 for contempt of court. The expert walked over to the clerk and said, "Here's twenty bucks. Ten wouldn't even begin to express my contempt for this court."

Another enthusiastic hobbyist is Charlie Lienesch who is addicted to the practice of obscure forms of woodwork. Charlie makes bracelets, cigarette trays, and all sorts of cute trinkets out of rare woods, and is perhaps the only individual engaged in this type of endeavor who has, at the same time, a circular saw and all his fingers.

T. K. M. Smith of Industrial Fuel Supply Co. was the first president of the Southern California Meter Association, and we are told on good authority that his initials first suggested the idea of alphabet soup.

And we just wonder if he knows that the manufacturers are now making a special brand with the aitches dropped, for shipment to England.

Then there was the rousty who thought his wife was angry because he came home with a black eye, and he never knew that when he came home he didn't have the black eye.

Speaking of a newly married couple known to both of us, Red Wilson remarked that they were ideally mated. "He snores," says Red, "and she's deaf, so they get along just dandy."

The pumper, incidentally, who recently married a widow, now knows what is meant by the widow's smite.

Also it was so windy in Los Angeles one night last week that next morning a certain firm found its safe had been blown open.

And according to Guy Corfield, success isn't so much knowing a good thing when you see it, as seizing a good thing when you know it.

One of our many operatives informs us that some years ago, two oil men —one from Whittier and one from Long Beach—were engaged in a violent argument concerning the superiority of their respective towns. The Whittier lad was somewhat offensive and abusive during the debate, and after a long bitter harangue he yelled, "Why lissen, you so and so, there's only one thing Long Beach has that Whittier hasn't, and that is navigable water." "Well," said the gentleman from the Beach, "You could fix that very easily. Just lay a pipe line from Whittier down to the Pacific Ocean, and if you can suck as well as you can blow, you'll have navigable water in Whittier in no time."

Wally McIlhany was, so far as we know, the first horticulturalist to cover that double dahlias could be cultivated in folding beds.

And according to Oliver Field, our leading ornithologist, the Soviet government recently levied a tax of one kopeck on every egg, and now the chickens kopecking around with every mark of dissatisfaction.

Which reminds us of the youngster who protested to his dad that the Smith's hens were "wiping their feet on our grass."

Every motorist, says Andy Anderson, should use his personal influence to secure good roads, but his duty doesn't require him to take a header through the windshield and smooth the highway down with the back of his neck.

And this, says Kirk Davis, is the season of the year when you can get what you don't want real cheap.

Charlie Schneider here notes that lawyers and fish have one common weakness, they are both fond of debate.

Charlie used to tell one about a woman who was commanded to appear as a witness in a certain suit. "Do you know the nature of an oath?" the judge asked, and the lady replied, "Aw sure! My husband's a rig builder."

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Committee Holds Quota For California To 551,000

The California quota for February will remain at 551,000 bbls. per day instead of being increased to 573,300 bbls. as was the Bureau of Mines recommendation.

Members of the Central Committee, after studying the question from all angles at their last meeting, decided upon the lower figure for several good reasons.

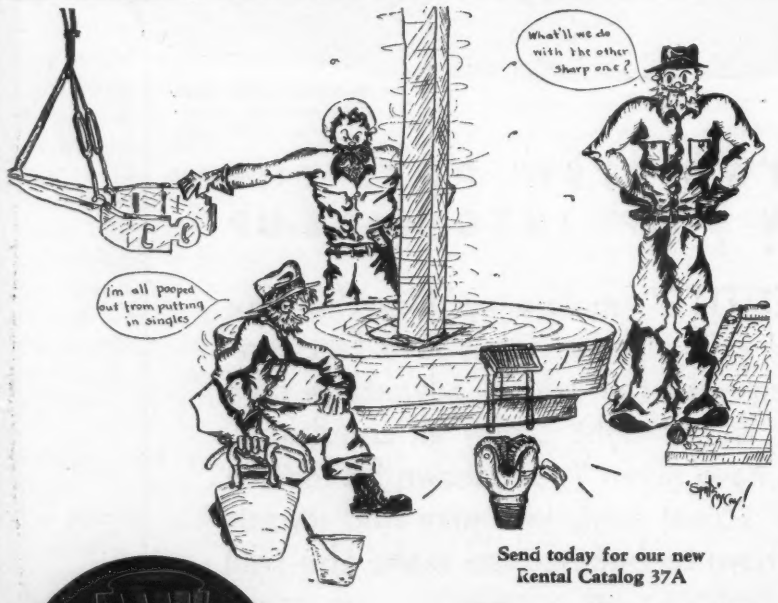
The first reason is that there is always an overproduction figure of from 30,000 to 35,000 bbls. per day, so that if the quota is held at 551,000 bbls. production will be at least 580,000 bbls., and actually has been running nearer 586,000 bbls., 130,000 bbls. over the Bureau of Mines recommendation. If the quota were raised to 573,000 bbls., actual production would unquestionably be over the 600,000-bbl. mark.

A second reason is that at the rate of production during November, the last month for which complete figures were available, and at the rate of demand for the same month, storage was being added to at approximately 100,000 bbls. per day. The November quota was the same as that for February, and the demand for February will remain at about the same level as for November, as nearly as can be determined.

A third reason is that production levels at present are so near the ideal that the Central Committee considered it unwise to experiment with a greater figure quite as soon as the Bureau of Mines thought it necessary. The Bureau of Mines' figures are set at the high level in order to allow for the fuel oil demand through the east during the cold winter months, with gasoline to be put into storage.

The situation is somewhat different in California. Here, the winter fuel demand is no so high, and the gasodemand is not so high, and the gasoly constant level. In addition, there is more opportunity to handle excess fuel stocks, at a lower cost to the industry, than to handle excess gasoline stocks, hence the desire to keep production as near the actual demand as possible.

Another reason for the discrepancy between the Central Committee's figures and those of the Bureau of Mines' is that the Central Committee makes a definite effort to plot out the **average** monthly demand for the year, thus keeping production at a fairly constant level, while the Bureau of Mines operates on a month-to-month basis, with wide variations between recommended levels for different months.



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The value of knowledge of the direction of dip is evident to any experienced operator or geologist, not only in the case of wildcat wells and core holes to determine structure, but in proven areas to determine when wells have passed through faults or crossed the axes of asymmetrical anticlines into areas from which they should be deflected.

The method employed is original and entirely different from those previously used. The superiority of Sperry-Sun's Core Orientation lies, not only in its *accuracy* but also in the fact that it *does not interfere with the progress of drilling.* The orientation is determined in a laboratory, to which selected cores, taken by any type core barrels in the ordinary course of drilling and properly marked, are shipped from any distance. *No special equipment* is required at the well, there is no *loss of drilling time.* The resulting saving in time when translated into dollars shows a substantial saving over former methods.

CONFIDENTIAL—It is understood that this service is absolutely confidential between our company and its customer.

METHOD OF SERVICE—One set of not less than three (3) and not more than five (5) samples of preferably fresh cores *with visible indications of a bedding plane* obtained from within a range of depth of 30 to 50 feet, carefully packed to avoid breakage, should be mailed to our Laboratory at 549 East Bixby Road, Long Beach, California. The samples should be accompanied by a letter stating the depth at which they were taken, also identifying the well by a Code Number and its approximate location by naming the Field, County and State. The inclination and its direction of that part of the hole from which core samples originate should also be given.

The samples must be *not less than two (2) inches in diameter and three (3) inches long, perpendicular to the axis.* Samples of larger sizes are preferable.

Samples must be marked "Top" and "Bottom". This is important otherwise the direction of the bedding plane might be reversed by 180°.

A comprehensive report on the findings will be delivered to the customer at the earliest possible moment.

SERVICE FEES:

a. For determining the Orientation from a set of three to five sample cores—$150.00.

b. If polarization fails to show, the charge will be only $75.00.

c. If after preparation of cores, no stratification is visible, the charge will be only $40.00.

d. If during test polarization or stratification fails to show and customers submit within two weeks another set of samples *from the same well* and if determination of the orientation of this second set is successful, the fee for this second test will be $150.00 minus the amount paid for the first test.

This charge is limited only to the second of two successive determinations.

If core samples are called for at customer's location at his request, a transportation charge of ten cents (10c) per mile will be charged for the round trip.

Remittance covering service fee must accompany cores shipped from foreign countries.

CONDITIONS—Tests are made at the customer's risk and the Sperry-Sun Well Surveying Company does not assume any liability from any cause.

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Government Again Sues To Repossess Sec. 36

Suit to recover possession of sec. 36, 30s-23e, Elk Hills, Naval Petroleum Reserve No. 1, has been instituted by the government represented by John W. Preston, former justice of the California Supreme Court, and Annette Abbott Adams, formerly an Assistant U. S. Attorney General, as special counsel. Three requests are made in the petition filed in the U. S. District Court at Los Angeles.

First, cancellation is sought of the patent to sec. 36 issued to the State of California in 1903 under the act of 1853, which gave the state, for public schools, secs. 36 and 16 in each township, unless they were mineral in character. The ground for the request is the allegation that the land was known to be mineral in character when the survey was approved and the patent issued. All present titles to sec. 36, the land sought to be recovered, are based upon the state's title, as the present owners all acquired their holdings by purchase from the state.

No direct charge of fraud is made in the complaint, which only alleges that the patent is void on the grounds stated. Obviously, it would appear strange to charge fraud against the state, and seemingly difficult to sustain a charge of fraud against the government on the part of purchasers from the state after the patent had been issued by the government itself.

Ickes' Part

Reference is made in the complaint to the action entered before the Land Office and to Secretary Ickes' decision therein that the land was known to have been mineral when the patent was issued. Apparently, the government through its special counsel, now rests its demand for possession upon the ground that the land was known to be mineral in character because the Secretary says it was. At least, so it would appear to a layman reading the complaint, although there are briefly set forth the facts of the withdrawal of Sept. 27, 1909, and of the creation of the Elk Hills Naval Reserve on July 2, 1910. However, Secretary Ickes in his decision holding the patent to be void because the mineral character of the land was known when the patent was issued, referred at length to the Supreme Court's judgment revoking patents issued to the Southern Pacific Railroad covering lands in the Elk Hills and surrounding the land now in dispute. In this case, the court held that the mineral character of the land was known, despite the lack of discovery of oil, and solely because the geological evidences of the probable presence of oil were sufficient to

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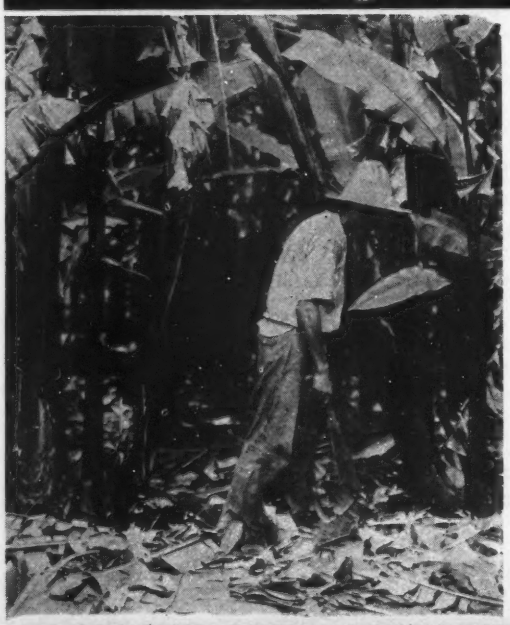

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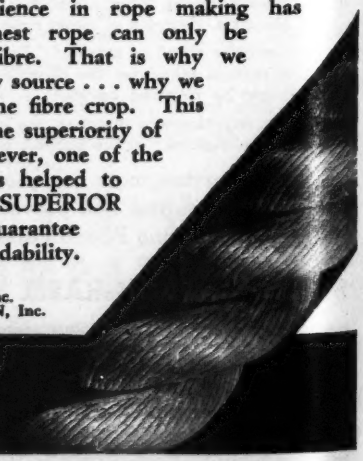

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justify a reasonably prudent business man's spending money in drilling prospect wells. Secretary Ickes based his ruling chiefly upon this decision.

Receivership Is Sought

The government's third request is that the court appoint a Receiver to take over the entire property pending final adjudication of the suit. Strong opposition to this part of the program may be expected to be one of the first moves of the defense, probably on the ground that the defendants are amply able to pay any damages awarded, accompanied by a flat denial that they have any intention of damaging the property by drainage. The government alleges that the value of the property approximates $10,000,000.

Payment for Oil-Gas Sought

In addition to its demand for recovery of the land in question, the government asks the court for an award for the full value of all oil, natural gas or gasoline extracted. Its estimates of these values approximate $1,000,000 without stating an absolute figure. For instance, it is estimated that more than 226,713.-22 bbls. of oil have been taken out, together with 1,121,266 mcf of natural gas. The value of the oil is declared to exceed $527,409.46 and that of the gas to exceed $57,050.33. Natural gasoline produced is estimated at 2,815,494.93 gallons, value $337,938.11.

In the event of the government's winning the suit, its claims may be reduced materially by counterclaims of the defendants for the value of the improvements and cost of drilling wells, which are frequently allowed in similar cases.

Numerous Defendants

Standard Oil Co. of California is the principal defendant. It holds fee title by purchase from the state to the w½ and the w½e½ of sec. 36, and holds leases on the e½e½ from Frank J. Carman, pioneer operator of Kern River, now a resident of

Land said to be known mineral-bearing when patent issued; Ickes' rulings apparent foundation for suit.

New York City, the late Charles Oliver Fairbanks of Santa Barbara, and the Pan American Petroleum Co., Mr. and Mrs. Carman, the Fairbanks heirs, the Pan American Petroleum Co., together with W. C. McDuffie, receiver, the Doheny estate and Mrs. Doheny personally complete the list of the principal defendants.

Other defendants are the Tidewater-Associated Oil Co., alleged to assert some claim to the property, the nature of which is declared to be unknown to the government, and also alleged to have purchased some of the oil and gas; the Southern California Gas Co., which holds a right of way across the land, and is also alleged to have purchased some of the natural gas extracted; the County of Kern, which has a right of way for a public highway across sec. 36; T. A. O'Donnell and Sidney Greeley, alleged to hold certain interests in part of the land; and the Chase National Bank of New York and the Bank of America, both of which institutions are trustees in a transaction involving some of the Pan American operations.

U. S. Judge James, who handled the Pan American bankruptcy case and appointed Mr. McDuffie receiver, has filed the court permission which must be had before the receiver and the bankrupt company may be sued.

No papers have yet been filed in court by any of the defendants. None are apt to be submitted for several weeks.

Some History of Case

Standard Oil bought title to the land against the opposition of its own geological staff at a time when there was no drilling there. Wm. Edwards, then the chief of the land department, was responsible for the purchase. So poor an opinion did the directors have of its prospects for oil that they offered to return it to the government to be incorporated in the Naval Reserve. The Navy Department's advisors appear to have thought as little of its value as the Standard's directors, for the Department declined the offer. A test well drilled some years later was about to be abandoned when the sharp eyes of a workman detected a trace of oil sufficient to bring about the revocation of the order and a decision to continue work.

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California Gasoline Sales 1,625,543,316 Gallons in 1936

December total 137,830,785 gallons, with year's sales 9.6% more than in 1935. Increase shown in each month, with 1936 total at all-time high.

With December taxable gasoline sales totaling 137,830,785 gallons, total taxable distribution of gasoline reached an all-time peak of 1,625,543,316 gallons during 1936. This total is 145,762,162 gallons greater than the 1935 total of 1,479,781,154 gallons, showing a gain of 9.6% during last year as compared with the year before.

The December tax of $4,093,574.53 brought total assessments to $48,286,084.92, against $44,021,668.86 in 1935. These figures are taken from the report of the State Board of Equalization, administrator of the tax.

1935-1936 Comparison

Reference to the table below, which shows a comparison of gasoline sales for each of the twelve months of 1935 and 1936 will show that with the exception of October, each month of 1936 showed greater gasoline distribution than the corresponding month of 1935. The explanation of the greater October, 1935 sales, as compared with October, 1936, is obscure, except that it was undoubtedly due to a more favorable comparative price situation.

The steady gain in gasoline sales, over so long a period of time, can probably be taken as an indication that economic recovery has progressed to a very definite extent, particularly when it is borne in mind that gasoline sales during 1936 far surpassed sales during any one of the boom years prior to and including 1929.

As for December sales, compared with those of November, the lineup of marketers underwent some changes. The ten leaders were: Standard, Union, Associated, Shell, General Petroleum, Richfield, Wilshire, The Texas, Rio Grande, and Hancock. During November, the ten leaders were: Standard, Union, Associated, Shell, General Petroleum, Wilshire, Richfield, The Texas, Hancock, and Rio Grande. These companies are listed in order of taxable sales, without reference to total gallonage.

The following table shows a comparison of California taxable gasoline sales for each month of 1936 and 1935:

	1936	1935
Jan.	116,721,981	101,098,364
Feb.	119,264,250	103,139,292
Mar.	148,284,544	109,192,643
Apr.	132,535,178	123,366,196
May	123,819,028	120,083,018
June	140,151,857	128,731,561
July	148,912,254	144,101,396
Aug.	139,900,854	128,854,043
Sept.	141,023,932	134,162,489
Oct.	139,688,948	149,404,774
Nov.	137,660,339	122,808,634
Dec.	137,830,785	114,838,744
Totals	1,625,543,316	1,479,781,154
Increase, 1936 against 1935		145,762,162

Below are listed the 36 marketers who sold 300,000 or more gallons of taxable gasoline during December. These companies are listed in order of taxable sales.

	Taxable Gallonage	Total Sales
Standard Oil Co.	23,366,408	37,791,419
Union Oil Co.	14,382,930	20,392,106
Associated Oil Co.	14,264,664	18,628,581
Shell Oil Co.	13,991,416	24,834,349
General Petroleum Corp.	12,650,811	23,525,996
Richfield Oil Co.	9,059,259	15,046,815
Wilshire Oil Co.	8,371,411	8,297,508
The Texas Co.	7,269,196	13,777,790
Rio Grande Oil Co.	3,811,255	3,795,958
Hancock Oil Co.	3,083,614	3,308,997
Mohawk Petroleum Co.	2,698,848	3,378,631
The Caminol Co.	2,404,537	2,446,227
Macmillan Petroleum Corp.	2,281,939	2,339,079
Estado Petroleum Corp.	1,971,715	1,952,065
Seaside Oil Co.	1,601,545	3,744,480
The Norwalk Co.	1,425,161	2,206,745
R. R. Bush Oil Co.	1,129,426	1,118,242
Exeter Refining Co.	1,061,907	1,401,313
St. Helens Petroleum Co.	989,217	1,000,440
Envoy Petroleum Co.	987,644	977,768
McCallen Refining & Producing Co.	974,269	964,526
Bachmann Petroleum Corp.	884,532	875,687
Operators Oil & Refining Co.	881,920	873,701
Ajax Oil & Refining Co.	822,478	1,000,804
Bell View Oil Syndicate	737,650	729,255
El Tejon Refining Co.	729,139	721,848
The Petrol Corp.	645,334	2,272,506
Olympic Refining Co.	598,602	659,196
Triangle Oil & Refining Co.	581,638	575,822
Los Nietos Producing & Refining Co.	575,297	3,457,220
Socal Oil & Refining Co.	509,879	504,780
Harbor Refining Co.	567,541	567,056
Eagle Oil & Refining Co.	461,890	457,272
J. O. Moffett	399,919	395,940
Elm Oil Co.	371,122	367,411
Edington Oil & Refining Co.	352,392	348,868
All others	1,124,280	.....
Total December	**137,830,785**	**204,634,104**
Total November	137,660,339	
Increase	170,446	
Total to December 31, 1936	**1,625,543,316**	

Stratford Gas Test Starts

A gas test on a 300-acre lease three miles from Stratford was scheduled to be spudded in on Feb. 1 by the Kettleman-Oildorado Development Co. The well is located in sec. 25, 20-20. L. N. Seymour of Los Angeles is the president of the company, while the drilling contractor is T. W. Burnham of Hanford, Calif.

Padre 1 Sands Up

In the Javon area, Ventura county, General Petroleum Corp.'s Padre No. 1 in sec. 23, 3n-24w was placed on the pump early this week. In a two hour pumping test it pumped muddy water with a trace of oil, and then sanded up. The well is bottomed at 5403 ft.

Rio Vista Well Spuds

Amerada Petroleum Co. spudded in another well in the Rio Vista gas field on Jan. 22. The new well, known as Drouin No. 1, was down 4500 ft. on Wednesday of this week.

The company has made a location for another well, Mayhood No. 1, which will be drilled at a point 2495 ft. south and 1987 ft. east of the nw corner of sec. 35, 4N-2E. A rig is standing for the well, and it is the company's plan to move over and spud in the well immediately upon the completion of Drouin No. 1.

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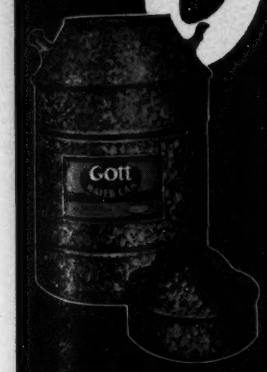

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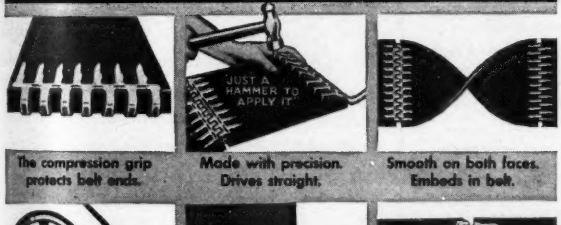

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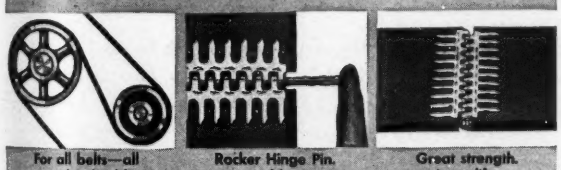

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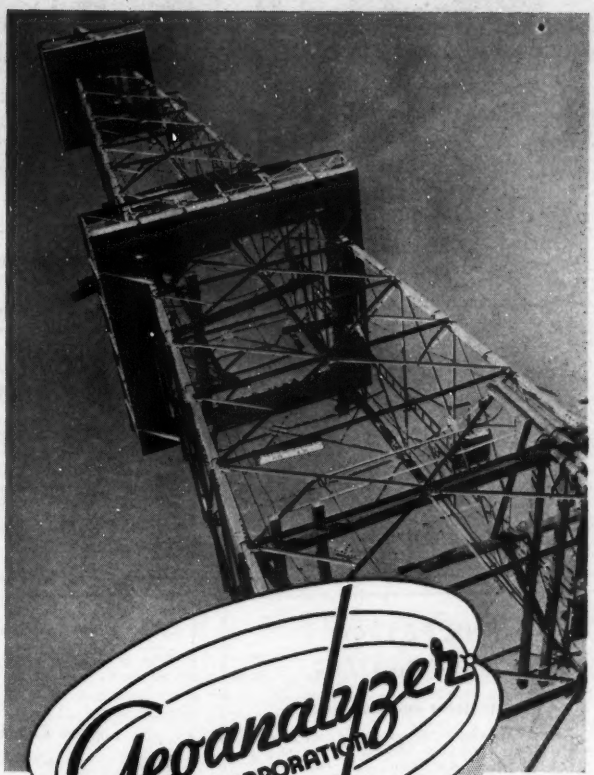

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Shulte New Manager Of Standard Department

A. F. Shulte and S. W. Selfridge

On Jan. 1, Albert F. Shulte, manager of the right of way department of Standard Oil Co. of California, retired after 35 years of active service with that company and its predecessors. On the same day Samuel W. Selfridge, assistant manager at Los Angeles, was appointed Mr. Shulte's successor.

Mr. Shulte came to work for the Pacific Coast Oil Co., on Oct. 17, 1901, as a clerk in Division "B" (now pipe line department). His advancement was rapid and shortly after he was made chief clerk of that department. Some time later he was transferred to the right of way division of the pipe line department and in June, 1919, when the right of way department was formed to handle matters of a right of way nature for all departments and subsidiaries of Standard Oil Co. he was appointed Manager.

Mr. Selfridge came to this company on Jan. 6, 1922, as an engineer and was assigned to fire prevention work in the engineering department.

MAPS

Large map of Los Angeles Basin oil fields and map showing all California oil fields. These maps indicate wells drilling, wells producing and abandoned, with depths. Paper, $15; cloth, $20. Also maps of Mid-Continent and Rocky Mountain areas and individual maps of oil and gas fields in any other districts.
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